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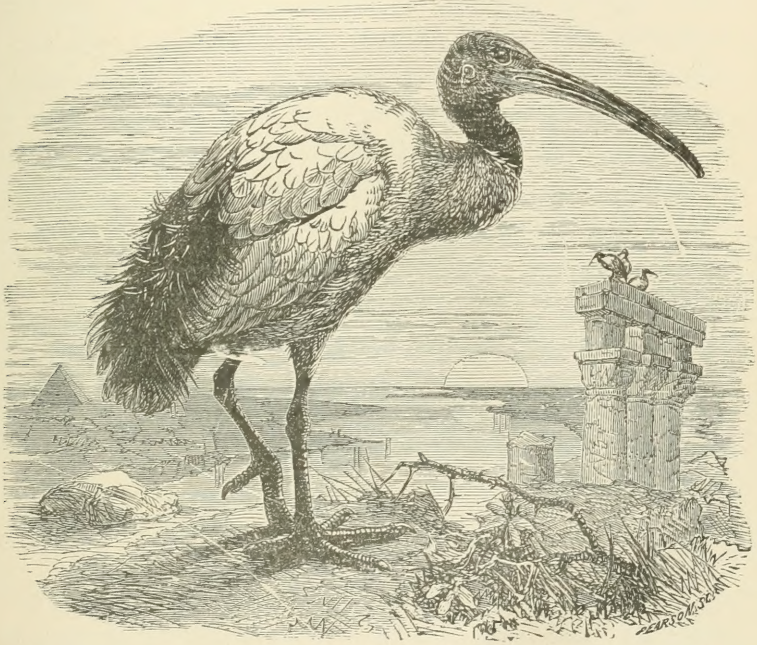
THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY
PHILIP LUTLEY SCLATER, D.Sc., F.R.S.,
AND
A. H. EVANS, M.A., F.Z.S.



VOL. II. 1908.

NINTH SERIES.

Delectasti me, Domine, in operibus manuum tuarum.

LONDON:
R. H. PORTER, 7 PRINCES STREET, CAVENDISH SQUARE, W.
1908.

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PREFACE.

With great satisfaction the Editors affix their signatures to the Preface of the Fiftieth Volume of 'The Ibis,' which is now concluded by the issue of the Two-hundredth Number. As our Members are aware, it has been decided to add a Supplement, which, it is hoped, will be ready for distribution at the same time as the first number of the year 1909. This Supplement will contain: (1) A short history of the "British Ornithologists' Union"; (2) Biographical Notices of the Founders of the Union, of the principal Contributors to the First Series of 'The Ibis,' and of the Officers; and (3) A complete list of all the Members of the Union who have been elected since its foundation in 1858. To this will be added a Report of the Proceedings of the Jubilee Meeting of the Union, which it is proposed to hold on the 9th of December next.

As will be seen by the Register in the present volume, the total number of the Members of the British Ornithologists' Union is now 473. Of these, 434 are Ordinary Members, 2 are Extraordinary Members, 10 are Honorary Members, 8 are Colonial Members, and 19 are Foreign Members. When the Union was first founded in 1858 it was thought best to restrict the number of Members to twenty. But after a few years had passed it was deemed advisable to place the Union on a broader basis, and this wise policy has been pursued ever since with unabated success, so that the total number of our Members now amounts, as already stated, to 473, and we have Ornithologists from nearly all parts of the globe associated with us in our undertaking. This expanse of Membership, it need hardly be said, has been of very great advantage to the Union generally, as well as of much assistance to the "Editors" of its Journal, in collecting information from all quarters.

On concluding the Fiftieth Volume of 'The Ibis' the Editors feel that they may congratulate the Members of the Union on the prosperity of their Journal, and may express their perfect confidence that its success will not be diminished in future years.

P. L. S.
A. H. E.

3 Hanover Square,
London, W.,
October 1st, 1908.

BRITISH ORNITHOLOGISTS' UNION.

1908.

[An asterisk indicates an Original Member. It is particularly requested that Members should give notice to the Secretary of the Union, 3 Hanover Square, London, W., of any error in their addresses or descriptions in this List, in order that it may be corrected.]

Date of Election.

1896. ALEXANDER, BOYD, F.Z.S. (late Rifle Brigade); Wilsley, Cranbrook, Kent.

1901. ALLCHIN, JAMES H.; Museum and Public Library, Maidstone.

1888. APLIN, OLIVER VERNON; Stonehill House, Bloxham, Oxon.

1896. ARCHIBALD, CHARLES F.; 2 Darnley Road, West Park, Leeds.

5 1896. ARRIGONI DEGLI ODDI, Count ETTORE, Professor of Zoology, University, Padua; and Ca' oddo, Monselice, Padua, Italy.

1901. ARUNDEL, Major WALTER B., F.Z.S.; High Ackworth, Pontefract.

1901. ASHBY, HERBERT; Oakwood Lodge, Chandler's Ford, near Southampton.

1908. ASHWORTH, Dr. JOHN WALLWORK, M.R.C.S., L.R.C.P., F.R.G.S., F.G.S.; Thorne Bank, Heaton Moor, near Stockport.

1897. ASTLEY, The Rev. HUBERT DELAVAL, M.A., F.Z.S.; Benham Park, Newbury, Berks.

10 1885. BACKHOUSE, JAMES, F.Z.S.; Daleside, Scarborough, Yorks.

1904. BAHR, PHILIP HEINRICH, B.A., F.Z.S.; Perrysfield House, Oxted, Surrey.

1901. BAILWARD, Col. ARTHUR CHURCHILL, F.Z.S. (R.F.A.); 1 Princes Mansions, Victoria Street, S.W.

1892. BAKER, E. C. STUART, F.Z.S.; care of Messrs. H. S. King & Co., 65 Cornhill, E.C.; and Shillong, Assam, India.

1901. BAKER, JOHN C., M.B., B.A.; Ceely House, Aylesbury, Bucks.

15 1899. BALFOUR, FREDERICK ROBERT STEPHEN; 21 Cambridge Square, W.

1908. BALL, CRISPIN ALFRED (Soudan Civil Service); El Kawa, White Nile Province, Soudan.

Date of Election.

1889. Balston, Richard James, F.Z.S.; Springfield, Maidstone.

1906. Bannerman, David A.; 11 Washington House, Basil Street, S.W.

1890. Barclay, Francis Hubert, F.Z.S.; The Warren, Cromer, Norfolk.

20 1872. Barclay, Colonel Hanbury, F.Z.S.; 34 Queen's Gate Gardens, S.W.

1885. Barclay, Hugh Gurney, F.Z.S.; Colney Hall, Norwich.

1889. Barrett-Hamilton, Major Gerald E. H., F.Z.S., 5th Royal Irish Rifles; Kilmanock, Campile, Ireland.

1881. Barrington, Richard Manliffe, LL.D.; Fassaroe, Bray, Co. Wicklow.

1903. Bartels, Max.; Pasir Datar, Halte Tjisaat (Preanger), Java, Dutch India.

25 1906. Bates, George L., C.M.Z.S.; Kribi, Kamerun, West Africa.

1908. Beaumont, Walter Ibbotson, F.Z.S.; 1 Osborne Place, Plymouth.

1902. Becher, Harry, C.E.; Beechwood Cottage, Burnham-on-Crouch.

1897. Benson, John; The Post Office, Vancouver, B.C.

1897. Berry, William, B.A., LL.B.; Tayfield, Newport, Fifeshire.

30 1907. Bethell, The Hon. Richard; 30 Hill Street, Mayfair, W.

1907. Bickerton, William, F.Z.S.; The Hawthorns, Marlborough Road, Watford, Herts.

1880. Bidwell, Edward; 1 Trig Lane, Upper Thames Street, E.C.

1884. Bingham, Lt.-Col. Charles Thomas, F.Z.S.; 6 Gwendwr Road, West Kensington, W.

1892. Bird, The Rev. Maurice C. H., M.A.; Brunstead Rectory, Stalham, S.O., Norfolk.

35 1891. Blaauw, Frans Ernst, C.M.Z.S.; Gooilust, 'sGraveland, Hilversum, Noord-Holland.

1903. Blathwayt, The Rev. Francis Linley, M.A.; 1 Stonefield Avenue, Lincoln.

1897. Bonar, The Rev. Horatius Ninian, F.Z.S.; Saltoun, Pencaitland, N.B.

1905. Bone, Henry Peters, F.Z.S.; 28 Adelaide Crescent, Brighton.

1894. Bonhote, John Lewis, M.A., F.L.S., F.Z.S.; Gadespring Lodge, Hemel Hempstead, Herts. (*Hon. Secretary & Treasurer.*)

40 1906. Boorman, Staines; Heath Farm, Send, Woking, Surrey.

Date of Election.

1898. Booth, George Albert; 6 North Road, Preston; and Fern Hill, Grange-over-Sands, Lancs.

1904. Booth, Harry B.; Ryhill, Ben Rhydding, *via* Leeds, Yorks.

1907. Boraston, John Maclair; Ingleside, Stretford, near Manchester.

1908. Borrer, Clifford Dalison; 6 Durham Place, Chelsea, S.W.

45 1895. Bradford, John Rose, M.D., D.Sc., F.R.S., F.Z.S; 8 Manchester Square, W.

1902. Bridgeman, Lieut. The Hon. Richard O. B., R.N.; Weston Park, Shifnal, Salop; and H.M.S. 'Bramble,' China Station.

1902. Bristowe, Bertram Arthur; The Cottage, Stoke D'Abernon, Surrey.

1885. Brockholes, William Fitzherbert; Claughton-on-Brock, Garstang, Lancashire.

1908. Brook, Edward Jonas; Hoddam Castle, Ecclefechan, N.B.

50 1890. Brooke, Harry Brinsley; 33 Egerton Gardens, S.W.

1899. Brooke, John Arthur, J.P.; Fenay Hall, Huddersfield; and Fearn Lodge, Ardgay, Ross-shire.

1900. Bruce, William Speirs, LL.D., F.R.S.E.; Scottish Oceanographical Laboratory, Surgeon's Hall, Edinburgh.

1907. Buckley, Charles Mars; 4 Hans Crescent, S.W.

1906. Bucknill, The Hon. John Alexander Strachey, M.A., F.Z.S.; Hylands House, Epsom, Surrey.

55 1895. Bulgaria, H.R.H. Ferdinand, Prince of, F.Z.S.; The Palace, Sofia, Bulgaria.

1908. Bunyard, Percy Frederick, F.Z.S.; 57 Kidderminster Road; Croydon, Surrey.

1907. Butler, Arthur Gardiner, Ph.D., F.L.S., F.Z.S.; 124 Beckenham Road, Beckenham, Kent.

1899. Butler, Arthur Lennox, F.Z.S.; Supt. of Game Preservation, Sudan Government, Khartum, Sudan.

1884. Butler, Lieut.-Col. E. A.; Winsford Hall, Stokesby, Great Yarmouth.

60 1896. Butterfield, W. C. J. Ruskin; Curator of the Corporation Museum, Brassey Institute, Hastings.

1900. Buttress, Bernard A. E.; Craft Hill, Dry Drayton, Cambridge.

1905. Buxton, Anthony; Knighton, Buckhurst Hill, Essex.

1884. Buxton, Geoffrey Fowell, F.Z.S.; Dunston Hall, Norwich.

Date of Election.

1895. Buxton, Samuel Gurney, F.Z.S.; Catton Hall, Norwich.

65 1896. Cade, Francis J.; Mosborough, The Park, Cheltenham.

1889. Cameron, Ewen Somerled, F.Z.S.; Fallon, Montana, U.S.A.

1896. Cameron, Capt. James S.; 2nd Bn. Royal Sussex Regt., Malta; and Low Wood, Bethersden, Ashford, Kent.

1888. Cameron, John Duncan; Low Wood, Bethersden, Ashford, Kent.

1892. Campbell, Charles William, C.M.G., C.M.Z.S., H.B.M. Chinese Consular Service; British Legation, Peking, China.

70 1906. Campbell, The Hon. Ian Malcolm; Cawdor Castle, Nairn, N.B.

1908. Carter, Thomas; Wensleydale, Broome Hill (Great Southern Railway), West Australia.

1890. Cave, Charles John Philip, M.A., F.Z.S.; Ditcham Park, Petersfield, Hants.

1894. Chance, A. Macomb, M.A.; 9 Hermitage Road, Edgbaston, Birmingham.

1884. Chapman, Abel, F.Z.S.; Houxty, Wark-on-Tyne.

75 1907. Chapman, Edward Henry; 3 Hare Court, Temple, E.C.

1882. Chase, Robert William; Pool Hall, Wishaw, near Birmingham.

1908. Cheesman, Robert E.; Bakers' Cross, Cranbrook.

1897. Cholmley, Alfred John, F.Z.S.; c/o Mr. R. H. Porter, 7 Princes Street, Cavendish Square, W.

1904. Clarke, Capt. Goland van Holt, D.S.O., F.Z.S., 18th Hussars; Brook House, Hayward's Heath, Sussex.

80 1889. Clarke, Lt.-Col. Stephenson Robert, F.Z.S.; Borde Hill, Cuckfield, Sussex.

1880. Clarke, William Eagle, F.L.S.; Royal Scottish Museum, Edinburgh.

1904. Cochrane, Commr. Henry Lake, R.N.; H.M.S. 'Cochrane,' 5th Cruiser Squadron, Sheerness; and Burston House, Pittville, Cheltenham.

1898. Cocks, Alfred Heneage, M.A., F.Z.S.; Poynetts, Skirmett, near Henley-on-Thames.

1895. Coles, Richard Edward; Ashley Arnewood, New Milton, S.O., Hants.

85 1904. Collier, Charles, F.Z.S.; Clieveden House, 21 Eaton Terrace, S.W.

Date of Election.

1906. Colman, Russell James, D.L., J.P.: Norwich.

1888. Cordeaux, Major William Wilfrid, 21st Lancers, Hounslow.

1896. Cowie, Lt.-Col. Alexander Hugh, R.E., F.Z.S.; Aldershot; and c/o H. Ward, Esq., Yeatton, Lymington, Hants.

1899. Cowie, The Rev. Archibald G. G.; c/o S.P.G. Mission, Cawnpore, India.

90 1894. Crewe, Sir Vauncey Harpur, Bt.; Calke Abbey, Derby.

1898. Crossman, Alan F., F.Z.S.; Cumminin Station, near Doodlakine, Western Australia.

1903. Crowley, John Cyril, M.A.; 5 Beech House Road, Croydon.

1898. Crowley, Reginald Alwyn; Highfield, Alton, Hants; and 22 High Street, Croydon.

1899. Curtis, Frederick, F.R.C.S.; Lyndens, Redhill, Surrey.

95 1877. Dalgleish, John J.; Brankston Grange, Bogside Station, Stirling, N.B.

1898. Dalrymple, Capt. John James, Viscount, M.P. (2nd Bn. Scots Guards); Lochinch, Castle Kennedy, Wigtonshire.

1896. Danford, Capt. Bertram W. Y., R.E.; Bermuda.

1897. Darnley, Ivo Francis Walton, Earl; Cobham Hall, Gravesend; and Clifton Lodge, Athboy, Co. Meath.

1883. Davidson, James, F.Z.S.; 32 Drumsheugh Gardens, Edinburgh.

100 1908. Davies, Claude G.; 'D' Squadron, Cape Mounted Riflemen, Bizana, E. Pondoland, South Africa.

1905. Davis, Kenneth James Acton; Julian Hill, Harrow; and King's College, Cambridge.

1902. Dent, Charles Henry; c/o Messrs. Bolitho & Co. Ltd., Penzance, Cornwall.

1891. De Vis, Charles W.; Queensland Museum, Brisbane; and care of Mr. B. Quaritch, 11 Grafton Street, W.

1893. De Winton, William Edward, F.Z.S.; Graftonbury, Hereford; and Orielton, Pembroke.

105 1896. Dobbie, James Bell, F.R.S.E., F.Z.S.; 9 Mansfield Place, Edinburgh.

1889. Dobie, William Henry, M.R.C.S.; 2 Hunter Street, Chester.

1895. Donovan, Major Charles, I.M.S.; Ardmore, Passage West, Co. Cork.

Date of Election.

1904. Dorrien-Smith, Thomas Algernon, J.P., D.L.; Tresco Abbey, Scilly Isles.

1904. Drake-Brockman, Dr. Ralph Evelyn, M.R.C.S., L.R.C.P., F.Z.S.; Cheriton, Wellington Road, Bournemouth.

110 1865. Dresser, Henry Eeles, F.L.S., F.Z.S.; 44 Hornton Court, Kensington, W.

1896. Drewitt, Frederic Dawtrey, M.A., M.D., F.Z.S.; 14 Palace Gardens Terrace, Kensington, W.

1890. Drummond-Hay, Col. James A. G. (late Coldstream Guards); Seggieden, Perth, N.B.

1904. Duckworth, George Herbert; 22 Hyde Park Gate, S.W.

1878. Durnford, W. Arthur, J.P.; Elsecar, Barnsley.

115 1896. Duthie, Lt.-Col. W. H. M.; 70 Kensington Park Road, W.

1905. Dutton, The Hon. and Rev. Canon Frederick George; Bibury, Fairford.

1903. Earle, Edward Vavasour; Franks Hall, Farningham, Kent.

1895. Elliot, Edmund A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.

1884. Elliott, Algernon, C.I.E.; 16 Belsize Grove, Hampstead, N.W.

120 1902. Ellison, The Rev. Allan, M.A.; Ardoyne House, Watton, Hertford.

1904. Elton, Henry Brown, B.A.; London Hospital, E.

1866. Elwes, Henry John, F.R.S., F.Z.S.; Colesborne, Cheltenham.

1879. Evans, Arthur Humble, M.A., F.Z.S.; 9 Harvey Road, Cambridge. (*Joint Editor.*)

1888. Evans, William, F.R.S.E.; 38 Morningside Park, Edinburgh.

125 1905. Ewen, Guy L'Estrange (King's Messenger); St. James's Club, Piccadilly, W.

1892. Fairbridge, William George; 141 Long Market Street, Capetown, South Africa.

1894. Farquhar, Rear-Admiral Arthur Murray, C.V.O.; Granville Lodge, Aboyne, N.B.; and H.M.S. 'Prince George,' Portsmouth.

1898. Farquhar, Commr. Stuart St. J., R.N.; H.M.S. 'Vestal,' China Station; and Drumnagesk, Aboyne, N.B.

1873. Feilden, Col. Henry Wemyss, C.B., C.M.Z.S.; Burwash, Sussex; and Junior United Service Club, S.W.

Date of Election.

130 1901. Finlinson, Horace W., F.Z.S.; 19 George Street, Bedford.

1892. Finn, Frank, B.A., F.Z.S.; 29 Chalcot Crescent, Primrose Hill, N.W.

1902. Flower, Capt. Stanley Smyth, F.Z.S.; Kedah House, Zoological Gardens, Gizeh, Cairo.

1884. Forbes, Henry Ogg, LL.D., F.Z.S.; Free Public Museums, Liverpool.

1903. Foster, Nevin Harkness; Hillsborough, Co. Down, Ireland.

135 1880. Foster, William; 39 Colville Gardens, Bayswater, W.

1887. Fowler, William Warde, M.A.; Lincoln College, Oxford.

1865. Fox, The Rev. Henry Elliott, M.A.; The Croft, Lytton Grove, Putney Hill, S.W.

1881. Freke, Percy Evans; Southpoint, Limes Road, Folkestone.

1895. Frohawk, Frederick William; Ashmount, Rayleigh, Essex.

140 1881. Gadow, Hans, Ph.D., F.R.S., F.Z.S.; University Museum of Zoology, Cambridge.

1886. Gainsborough, Charles William Francis, Earl of; Exton Park, Oakham.

1907. Gandolfi, Alfonso Otho Gandolfi-Hornyold, Duke, Ph.D.; Blackmore Park, Hanley Swan, Worcestershire.

1900. Garnett, Charles; 9 Cleveland Gardens, Hyde Park, W.; and New University Club, St. James's Street, S.W.

1892. Gerrard, John, Government Inspector of Mines; Worsley, near Manchester.

145 1902. Gibbins, William Bevington, F.Z.S.; Ettington, Stratford-on-Avon.

1879. Gibson, Ernest, F.Z.S.; Los Yngleses, General Lavalle en Ajó, Buenos Aires.

1902. Gillett, Frederick, F.Z.S.; 28 Beaufort Gardens, S.W.; and Junior Carlton Club, Pall Mall, S.W.

1902. Gillman, Arthur Riley, F.Z.S.; 5 Fellows Road, Hampstead, N.W.; and 3 Southampton Street, High Holborn, W.C.

1904. Gilroy, Norman; 95 Claremont Road, Forest Gate, E.; and Seaford, Sussex.

150 1903. Gladstone, Hugh Steuart, M.A., F.Z.S.; Lannhall, Thornhill, Dumfriesshire.

1908. Godman, Capt. Edward Shirley (2nd Dorset Regiment); Muntham, Horsham.

* 1858. Godman, Frederick DuCane, D.C.L., F.R.S., F.Z.S.; 45 Pont Street, S.W. (*President.*)

Date of Election.

* 1858. GODMAN, PERCY SANDEN, B.A., C.M.Z.S.; Muntham, Horsham.

1906. GOODALL, JEREMIAH MATTHEWS, F.Z.S.; 52 Oxford Gardens, North Kensington, W.

155 1901. GOODCHILD, HERBERT; 66 Gloucester Road, Regent's Park, N.W.

1900. GOODFELLOW, WALTER; Montrose, New Park Road, West Southbourne, Hants.

1905. GOODYER, LEONARD ERNEST; 17 Old Hall Drive, Gorton, Manchester.

1906. GORDON, SETON PAUL, F.Z.S.; Auchintoul, Aboyne, N.B.

1899. GOULD, FRANK HERBERT CARRUTHERS, F.Z.S.; Matham Manor House, East Molesey, Surrey.

160 1895. GRABHAM, OXLEY, M.A.; The Museum, York.

1906. GRIFFITH, ARTHUR FOSTER; 59 Montpellier Road, Brighton.

1885. GUILLEMARD, FRANCIS HENRY HILL, M.A., M.D., F.Z.S.; Old Mill House, Trumpington, Cambridge.

1876. GÜNTHER, ALBERT C. L. G., M.A., M.D., F.R.S., F.Z.S.; 2 Lichfield Road, Kew Gardens, S.W.

1908. GURNEY, GERARD HUDSON, F.Z.S., F.E.S.; Keswick Hall, Norwich.

165 1870. GURNEY, JOHN HENRY, F.Z.S.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W.

1896. GURNEY, ROBERT; Ingham Old Hall, Stalham, Norfolk.

1890. GWATKIN, JOSHUA REYNOLDS GASCOIGN; The Manor House, Potterne, Devizes.

1901. HAAGNER, ALWIN KARL, F.Z.S.; Dynamite Factory, Modderfontein, Transvaal, South Africa.

1891. HAIGH, GEORGE HENRY CATON; Grainsby Hall, Great Grimsby, Lincolnshire.

170 1887. HAINES, JOHN PLEYDELL WILTON; 17 King Street, Gloucester.

1898. HALE, The Rev. JAMES RASHLEIGH, M.A.; Boxley Vicarage, Maidstone, Kent.

1905. HAMERTON, Capt. ALBERT EDWARD, D.S.O., R.A.M.C., F.Z.S.; St. Alban's Vicarage, York Road, Leeds.

1904. HARINGTON, Major HERBERT HASTINGS; c/o Messrs. Thos. Cook & Sons, Ludgate Circus, E.C.

1900. HARPER, EDMUND WILLIAM, F.Z.S.; 55 Waterloo Road, Bedford.

175 1900. HARRIS, HENRY EDWARD; 2 St. Aubyn's Mansions, Hove, Brighton.

Date of Election.

1893. Hartert, Ernst J. O., Ph.D., F.Z.S.; The Zoological Museum, Tring, Herts.

1868. Harting, James Edmund, F.L.S., F.Z.S.; Edgewood, Weybridge, Surrey.

1893. Hartmann, William; Milburn, Esher, Surrey.

1899. Harvey, Capt. Robert Napier, R.E.; Stanhope Lines, Aldershot.

180 1873. Harvie-Brown, John A., F.R.S.E., F.Z.S.; Dunipace House, Larbert, Stirlingshire, N.B.

1900. Hasluck, Percy Pedley Harford; The Wilderness, Southgate, N.

1902. Hatfeild, John Randall; Edlington Hall, Horncastle, Lincolnshire.

1898. Hawker, Richard Macdonnell, F.Z.S.; Bath Club, Dover Street, W.; and c/o Messrs. Dalgety & Co., 96 Bishopsgate Street Within, E.C.

1905. Hawkshaw, John Clarke, M.A., M.I.C.E., F.Z.S., F.G.S.; Hollycombe, Liphook, Hants; and 33 Great George Street, Westminster, S.W.

185 1905. Headley, Frederick Webb, M.A., F.Z.S.; Haileybury College, Herts.

1907. Hedges, George Mitchell; 42 Kensington Park Gardens, W.

1905. Hellmayr, Carl E.; Zoologische Staatssammlung, Alte Akademie, Neuhauserstrasse 51 II, München, Germany.

1902. Hett, Geoffrey Seccombe, F.Z.S.; 16 Palace Gardens Mansions, The Mall, Kensington, W.

1899. Heywood, Richard, F.Z.S.; Narside, Narborough, Swaffham, Norfolk.

190 1900. Hills, John Waller, M.P.; 14 Victoria Grove, Kensington, W.; and Highhead Castle, Carlisle.

1884. Holdsworth, Charles James, J.P.; Fernhill, Alderley Edge, Cheshire.

1877. Holdsworth, Edmund William Hunt, F.Z.S.; South Town, Dartmouth, Devon.

1905. Hopkinson, Emilius, M.B., D.S.O., F.Z.S.; 45 Sussex Square, Brighton; and Bathurst, Gambia, West Africa.

1904. Horsbrugh, Major Boyd Robert, F.Z.S. (Army Service Corps); Tempe, Bloemfontein, O.R.C., South Africa.

195 1888. Horsfield, Herbert Knight; Crescent Hill, Filey, Yorks.

1895. Howard, Henry Eliot, F.Z.S.; Clarelands, near Stourport.

1881. Howard, Robert James; Shearbank, Blackburn, Lancashire.

Date of Election.

* 1858. Hudleston, Wilfrid Hudleston, M.A., F.R.S., F.Z.S.; 8 Stanhope Gardens, S.W.

1893. Hudson, William Henry, F.Z.S.; Tower House, St. Luke's Road, Westbourne Park, W.

200 1869. Hume, Allan Octavian, C.B., C.S.I., F.Z.S.; The Chalet, Kingswood Road, Upper Norwood, S.E.

1890. Hunter, Henry Charles Vicars, F.Z.S.; Mawley Hall, Cleobury Mortimer, Salop.

1901. Ingram, Collingwood; The Bungalow, Westgate-on-Sea.

1902. Innes Bey, Dr. Walter Francis; Curator of the Zoological Museum, School of Medicine, Cairo, Egypt.

1888. Jackson, Frederick John, C.B., C.M.G., F.Z.S., F.L.S.; Uganda, British East Africa; The Red House, Aldeburgh, Suffolk.

205 1892. James, Henry Ashworth, F.Z.S.; Hurstmonceux Place, Hailsham, Sussex.

1896. Jesse, William, F.Z.S.; Meerut College, Meerut, India.

1889. Johnson, Frederick Ponsonby, B.A., J.P., D.L.; Castlesteads, Brampton, Cumberland.

1891. Johnston, Sir Harry Hamilton, G.C.M.G., K.C.B., F.Z.S. St. John's Priory, Poling, near Arundel, Sussex.

1905. Johnstone, Edwin James, F.Z.S.; Burrswood, Groombridge, Sussex; and Junior Carlton Club, Pall Mall, S.W.

210 1900. Jones, Major Henry, F.Z.S. (late 62nd Regt.); East Wickham House, Welling, Kent.

1899. Jourdain, The Rev. Francis Charles Robert, M.A.; Clifton Vicarage, near Ashburne, Derbyshire.

1902. Joy, Norman Humbert, M.R.C.S., L.R.C.P.; Thurlestone, Bradfield, near Reading.

1908. Keep, Ralph S., F.R.H.S.; Oakhill, East Budleigh, Devon.

1880. Kelham, Br.-Genl. Henry Robert, C.B. (late Highland Light Infantry); Well Hall, Hamilton, N.B.

215 1894. Kelsall, Major Harry Joseph, R.A.: Golden Hill, Freshwater, Isle of Wight.

1897. Kelsall, The Rev. John Edward, M.A.; Milton Rectory, New Milton, Hants.

1904. Kelso, John Edward Harry, M.D.; San Remo, 12 Festing Road, Southsea, Hants.

1891. Kerr, John Graham, F.Z.S., Regius Professor of Zoology, The University, Glasgow.

Date of Election.

1895. Kingsford, William Edward; Cairo, Egypt.

220 1902. Kinnear, Norman Boyd; Bombay Natural History Society, 6 Apollo Street, Bombay, India.

1882. Knubley, The Rev. Edward Ponsonby, M.A.; Steeple Ashton Vicarage, Trowbridge, Wilts.

1900. Koenig, Dr. Alexander Ferdinand; Coblenzer-Strasse 164, Bonn, Germany.

1906. Kollibay, Paul; Ring 12 I, Neisse, Germany.

1892. Laidlaw, Thomas Geddes; Bank of Scotland, Perth.

225 1884. Langton, Herbert; 11 Marlborough Place, Brighton.

1881. Lascelles, The Hon. Gerald William, F.Z.S.; The King's House, Lyndhurst.

1892. La Touche, John David Digues, C.M.Z.S.; c/o Custom House, Chinkiang, China (*viâ* Siberia).

1898. Learoyd, A. Ernest; Brandsby Hall, Easingwold, Yorks.

1905. Legge, The Hon. Gerald; 37 Charles Street, Berkeley Square, W.

230 1905. Leigh, Henry Boughton; Brownsover Hall, Rugby.

1906. Leigh, John Hamilton, F.Z.S.; Matcham's Park, Ringwood, Hants.

1898. Le Souëf, Dudley, C.M.Z.S.; Director of the Zoological Gardens, Melbourne, Victoria, Australia.

1868. Le Strange, Hamon, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk.

1903. Lethbridge, Ambrose Yarburgh; Guards' Club, Pall Mall, S.W.

235 1889. Leyland, Christopher John, F.Z.S.; Haggerston Castle, Beal, Northumberland.

1897. Lilford, John, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.

1897. Lodge, George Edward, F.Z.S.; The Studios, 5 Thurloe Square, S.W.

1908. Long, Sydney Herbert, M.D.; 37 St. Giles Street, Norwich.

1905. Lovat, Lt.-Col. Simon Joseph, Lord, C.B., C.V.O., D.S.O., F.Z.S.; Beaufort Castle, Beauly, Inverness-shire.

240 1904. Lowe, Dr. Percy R.; c/o Sir Frederic Johnstone, Bt., The Hatch, Windsor.

1889. Loyd, Lt.-Col. Arthur Purvis, F.Z.S. (late 21st Hussars); Hurst Lodge, Sunningdale, Berks.

Date of Election.

1902. Lucas, Auberon Thomas, Lord, F.Z.S.; 7 Cleveland Row, St. James's, S.W.

1877. Lumsden, James, F.Z.S.; Arden House, Arden, Dumbartonshire, N.B.

1908. Lyell, Charles Henry, M.P.; 48 Eaton Place, S.W.

245 1904. Lynes, Commander Hubert, R.N.; H.M.S. 'Excellent,' Portsmouth.

1900. McConnell, Frederick Vavasour; 37 Cranley Gardens, South Kensington, S.W.

1904. Macdonald, Kenneth Campbell; Burma Police, Rangoon, Burma.

1905. McGregor, Peter James Colquhoun; British Embassy, Constantinople.

1897. McLean, John Chambers; Te Karaka, Gisborne, New Zealand.

250 1899. Macmillan, George Augustin, F.Z.S.; 27 Queen's Gate Gardens, S.W.

1906. Macmillan, William Edward Frank; 27 Queen's Gate Gardens, S.W.

1894. Macpherson, Arthur Holte, F.Z.S.; 54 Cleveland Square, Hyde Park, W.

1906. Magrath, Major Henry Augustus Frederick; 51st Sikhs Frontier Force, Bannu, N.W.P., India; and c/o Messrs. H. S. King & Co., 9 Pall Mall, S.W.

1907. Mann, Thomas Hugh, F.Z.S.; Trulls Hatch, Rotherfield, Sussex.

255 1908. Maples, Stuart; Kingsbury, Stevenage, Herts.

1904. Mapleton, Harvey William, B.A.; Bracknell Cottage, Hartley Wintney, Winchfield, Hants; and Badgworth Rectory, Axbridge, Somerset.

1894. Marshall, Archibald McLean, F.Z.S.; Crogen, Corwen, N. Wales.

1894. Marshall, James McLean, F.Z.S.; Bleaton Hallet, Blairgowrie, N.B.

1897. Mason, Col. Edward Snow; 20 Minster Yard, Lincoln.

260 1898. Massey, Herbert; Ivy Lea, Burnage, Didsbury, Manchester.

1907. Mathews, Gregory Macalister, F.L.S., F.Z.S.; Langley Mount, Watford, Herts.

1908. Mathews, Richard Owen; Langley Mount, Watford.

Date of Election.

1896. Maxwell, The Rt. Hon. Sir Herbert Eustace, Bt., P.C., F.R.S.; Monreith, Whauphill, Wigtownshire, N.B.

1883. Meade-Waldo, Edmund Gustavus Bloomfield, F.Z.S.; Stonewall Park, Edenbridge, Kent.

265 1899. Meinertzhagen, Capt. Richard, F.Z.S.; Brookwood Park, Alresford, Hants.

1886. Millais, John Guille, F.Z.S.; Compton's Brow, Horsham.

1903. Mills, The Rev. Henry Holroyd, F.Z.S.; The Rectory, St. Stephen-in-Brannel, Grampound Road, Cornwall.

1879. Mitchell, Frederick Shaw; Hornshaws, Millstream, Vancouver Island, British Columbia.

1901. Mitchell, P. Chalmers, M.A., D.Sc., LL.D., F.R.S., F.Z.S.; Secretary to the Zoological Society of London, 3 Hanover Square, W.

270 1897. Mitchell, William, F.Z.S.; 5 Bury Street, St. James's, S.W.

1904. Mitchell-Carruthers, Alexander Douglas; Little Munden Rectory, Ware, Herts.

1908. Momber, A. R.; La Junia, San Remo, Italy; and 28 Elm Park Road, S.W.

1898. Monro, Horace Cecil, C.B.; Queen Anne's Mansions, Queen Anne's Gate, S.W.

1900. Montagu, The Hon. Edwin Samuel, M.P.; 12 Kensington Palace Gardens, W.

275 1906. Moore, Major Cyril H.; District Pay Office, Gibraltar.

1886. Muirhead, George; Speybank, Fochabers, Moray, N.B.

1893. Mullens, Major William Herbert, M.A., LL.M., F.Z.S.; 9 St. James's Place, S.W.

1892. Munn, Philip Winchester, F.Z.S.; Laverstoke, Whitchurch, Hants.

1897. Munt, Henry, F.Z.S.; 83 Kensington Gardens Square, W.

280 1900. Musters, John Patricius Chaworth, D.L., J.P.; Annesley Park, Nottingham.

1907. Neave, Sheffield Airey; Mill Green Park, Ingatestone, Essex.

1882. Nelson, Thomas Hudson; Seafield, Redcar, Yorkshire.

1895. Nesham, Robert, F.Z.S., F.E.S.; Utrecht House, Queen's Road, Clapham Park, S.W.

1897. Neumann, Professor Oscar, C.M.Z.S.; Zoological Museum, Tring, Herts.

Date of Election.

285 1872. Newcome, Francis D'Arcy William Clough; Thurston Lodge, Bury St. Edmunds, Suffolk.

1904. Newman, Thomas Henry, F.Z.S.; Newlands, Harrowdene Road, Wembley, Middlesex.

1886. Nicholls, Howard Hill John, M.R.C.S.; Bramber Lodge, Downview Road, West Worthing.

1902. Nichols, John Bruce, F.Z.S.; Parliament Mansions, Victoria Street, S.W.

1900. Nichols, Walter Buchanan; Stour Lodge, Bradfield, Manningtree, Essex.

290 1876. Nicholson, Francis, F.Z.S.; The Knoll, Windermere.

1902. Nicoll, Michael John, F.Z.S.; Valhalla House, Zoological Gardens, Gizeh, Cairo.

1904. Noakes, Wickham; Selsdon Park, Croydon.

1895. Noble, Heatley, F.Z.S.; Temple Combe, Henley-on-Thames.

1892. Ogilvie, Fergus Menteith, M.A., F.Z.S.; The Shrubbery, 72 Woodstock Road, Oxford.

295 1890. Ogilvie-Grant, William Robert, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1889. Ogle, Bertram Savile; Hill House, Steeple Aston, Oxford.

1907. Oldham, Charles, F.Z.S.; Essex House, Wellington Road, Watford.

1906. Osmaston, Bertram Beresford (Imperial Forest Service); Naini Tal, India.

1883. Parker, Henry, C.E.; Whitbourne Lodge, Manby Road, Great Malvern.

300 1879. Parkin, Thomas, M.A., F.Z.S.; Fairseat, High Wickham, Hastings.

1908. Paton, Edward Richmond, F.Z.S.; Brookdale, Grassendale, near Liverpool.

1891. Patterson, Robert, F.L.S., M.R.I.A.; Glenbank, Holywood, Co. Down.

1904. Pearse, Theed; Mentmore, Ampthill Road, Bedford.

1894. Pearson, Charles Edward, F.L.S.; Hillcrest, Lowdham, Notts.

305 1891. Pearson, Henry J., F.Z.S.; Bramcote, Notts.

1902. Pease, Sir Alfred Edward, Bt., F.Z.S.; Pinchinthorpe House, Guisborough, Yorkshire; and Brooks's Club, St. James's Street, S.W.

1898. Penn, Eric Frank; Taverham Hall, Norwich.

Date of Election.

1891. Penrose, Francis George, M.D., F.Z.S.; Wick House, Downton, Salisbury, Wilts.

1900. Percival, Arthur Blayney, F.Z.S.; Game-Ranger, Nairobi, British East Africa Protectorate; and Somerset Court, Brent Knoll, Somerset.

310 1907. Percy, Lord William; 2 Grosvenor Place, S.W.; and Alnwick Castle, Alnwick, Northumberland.

1886. Phillips, Ethelbert Lort, F.Z.S.; 79 Cadogan Square, S.W.

1888. Phillips, George Thorne; Wokingham, Berkshire.

1893. Pigott, Sir Thomas Digby, K.C.B.; The Lodge, Lower Sheringham.

1908. Player, W. J. Percy; The Quarr, Clydach, R.S.O., Glamorganshire.

315 1907. Pocock, Reginald Innes, F.L.S., F.Z.S.; Superintendent of the Zoological Gardens, Regent's Park, N.W.

1905. Pollard, Capt. Arthur Erskine St. Vincent (The Border Regiment); Haynford Hall, Norwich.

1896. Popham, Hugh Leyborne, M.A.; 106 Old Town Street, Plymouth.

1898. Price, Athelstan Elder, F.Z.S.; 61 Great Cumberland Place, W.

1903. Proctor, Major Frederick William (late West Riding Regt.); Downfield, Maidenhead.

320 1901. Proud, John T.; Dellwood, Bishop Auckland.

1893. Pycraft, William Plane, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1888. Radclyffe, Charles Robert Eustace; Hyde, Wareham, Dorset.

1903. Ralfe, Pilcher George; The Parade, Castletown, Isle of Man.

1903. Ratcliff, Frederick Rowlinson; 24 Lancaster Gate, W.

325 1906. Rattray, Col. Rullion Hare; 68 Dry Hill Park Road, Tonbridge, Kent.

1879. Rawson, Herbert Evelyn; Comyn Hill, Ilfracombe.

1894. Read, Richard Henry, M.R.C.S., L.R.C.P.; Church Street, Hanley, Staffordshire.

1888. Read, Robert H.; 8*a* South Parade, Bedford Park, W.

1877. Reid, Capt. Philip Savile Grey (late R.E.), F.Z.S.; The Elms, Yalding, Maidstone.

330 1903. Renaut, William E.; 17 Emanuel Avenue, Friar's Park, Acton, W.

Date of Election.

1908. Richardson, Norman Frederic; Bradley Court, Mitcheldean, Gloucestershire; and Lynndale, Manor Road, Forest Hill, S.E.

1907. Richmond, Herbert William; King's College, Cambridge.

1895. Rickett, Charles Boughey, F.Z.S.; Upton House, Lostwithiel, Cornwall.

1896. Rippon, Lt.-Col. George, F.Z.S.; 89th Punjabis, P.O. Kalaw, Southern Shan States, Upper Burma.

335 1907. Ritchie, Archibald Thomas Ayres; The Head Master's, Harrow; and Overstrand, near Cromer.

1902. Rivière, Bernard Beryl; St. Giles's Plain, Norwich.

1908. Robertson, Sir Henry Beyer, B.A.; Palé, Corwen, N. Wales.

1898. Robinson, Herbert C., C.M.Z.S.; Selangor State Museum, Kuala Lumpur, Federated Malay States.

1896. Rogers, Lt.-Col. John Middleton, D.S.O., F.Z.S. (late 1st Dragoons); Riverhill, Sevenoaks, Kent.

340 1893. Rothschild, The Hon. Lionel Walter, D.Sc., Ph.D., M.P., F.Z.S.; The Zoological Museum, Tring, Herts.

1894. Rothschild, The Hon. Nathaniel Charles, M.A., F.Z.S.; Tring Park, Tring, Herts.

1907. Russell, Conrad George Edward, F.Z.S.; 2 Audley Square, W.

1883. St. Quintin, William Herbert, F.Z.S.; Scampston Hall, Rillington, Yorkshire.

1903. Sandeman, Capt. Robert Preston (late 10th Hussars): Dan-y Park, Crickhowell.

345 1899. Sapsworth, Arnold Duer, F.Z.S.; National Liberal Club, Whitehall Place, S.W.

1902. Sargeaunt, Arthur St. George; 83 Madeley Road, Ealing, W.

1904. Sargent, James; 76 Jermyn Street, S.W.; and 2 Napier Villas, Cambridge Road, Barnes.

1902. Saunders, William Henry Radcliffe, C.E.; 79 Warwick Road, S.W.

1898. Scherren, Henry, F.Z.S.; 9 Cavendish Road, Harringay, N.

350 1907. Schwann, Geoffrey; 4 Prince's Gardens, S.W.

1905. Schwann, Harold, F.Z.S.; Campden House, Cirencester, Gloucestershire.

Date of Election.

* 1858. Sclater, Philip Lutley, D.Sc., F.R.S., F.Z.S.; Odiham Priory, Winchfield, Hants; and Athenæum Club, Pall Mall, S.W. (*Joint Editor.*)

1891. Sclater, William Lutley, M.A., F.Z.S.; P.O. Box 1207, Colorado Springs, Colorado, U.S.A.

1907. Scott, The Rev. Canon Samuel Gilbert, M.A.; The Rectory, Havant, Hants.

355 1899. Selous, Frederick Courteney, F.Z.S.; Heatherside, Worplesdon, Surrey.

1889. Senhouse, Humphrey Patricius, B.A.; The Fitz, Cockermouth, Cumberland.

1908. Seppings, Capt. John William Hamilton (Army Pay Department); 3 West View, Cork, Ireland.

1899. Serle, The Rev. William, M.A., B.D.; The Manse, Duddingston, Edinburgh.

1900. Service, Robert; Maxwelltown, Dumfries.

360 1901. Seth-Smith, David, F.Z.S.; 14 Canning Road, Addiscombe, Croydon.

1904. Seth-Smith, Leslie Moffat, B.A.; Alleyne, Caterham Valley, Surrey.

1899. Sharman, Frederic, F.Z.S.; 47 Goldington Road, Bedford.

1871. Sharpe, Richard Bowdler, LL.D., F.L.S., F.Z.S.; Assistant Keeper, Zoological Department, British Museum (Natural History), South Kensington, S.W.

1870. Shelley, Capt. George Ernest, F.Z.S. (late Grenadier Guards); 39 Egerton Gardens, South Kensington, S.W.

365 1865. Shepherd, The Rev. Charles William, M.A., F.Z.S.; Trottiscliffe Rectory, Maidstone, Kent.

1900. Simey, Athelstane Iliff; 2 Vernon Chambers, Southampton Row, W.C.

1908. Smalley, Frederic William; Challan Hall, Silverdale, near Carnforth, Lancs.

1906. Snouckaert van Schauburg, Baron René Charles; Neerlangbroek, Holland.

1881. Southwell, Thomas, F.Z.S.; 10 The Crescent, Chapel Field, Norwich.

370 1903. Sparrow, Major Richard, F.Z.S.; 7th Dragoon Guards, Abbasie Barracks, Cairo, Egypt; and Rookwoods, Sible Hedingham, Essex.

Date of Election.

1906. Stanford, Surgeon Charles Edward Cortis, B.Sc., M.B., R.N.; Royal Marine Barracks, Plymouth.

1893. Stanley, Samuel S.: Fair View House, Harbury, Leamington, Warwickshire.

1900. Stares, John William Chester; Portchester, Hants.

1902. Stenhouse, John Hutton, M.B., R.N.; c/o Messrs. Woodhead & Co., 44 Charing Cross, S.W.

375 1906. Steward, Edward Simmons, F.R.C.S.; 10 Prince's Square, Harrogate, Yorks.

1898. Stirling, William, J.P., D.L.; Ord House, Muir of Ord, N.B.

1893. Stonham, Charles, C.M.G., F.R.C.S., F.Z.S.; 4 Harley Street, Cavendish Square, W.

1881. Studdy, Col. Robert Wright (late Manchester Regiment); Waddeton Court, Brixham, Devon.

1887. Styan, Frederick William, F.Z.S.; Ben Craig, Bayham Road, Sevenoaks; and Shanghai, China.

380 1887. Swinburne, John: Haenertsburg, Transvaal, S. Africa.

1882. Swinhoe, Col. Charles, M.A., F.L.S., F.Z.S.; 6 Gunterstone Road, W. Kensington, W.

1884. Tait, William Chaster, C.M.Z.S.; Entre Quintas 155, Oporto, Portugal.

1905. Taylor, Lionel Edward, F.Z.S.: Division of Forestry, Agricultural Department, Pretoria, Transvaal.

1889. Tennant, Sir Edward Priaulx, Bt., M.A, M.P., F.Z.S.; 34 Queen Anne's Gate, S.W.; and The Glen, Innerleithen, N.B.

385 1886. Terry, Major Horace A. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton.

1904. Thompson, Lieut. William R., R.G.A.; Montrose, Weymouth.

1900. Thorburn, Archibald, F.Z.S.; High Leybourne, Hascombe, near Godalming, Surrey.

1893. Thorpe, Dixon L.; Loshville, Etterby Scaur, Carlisle.

1903. Ticehurst, Claud Buchanan, M.D.; Winstowe, St. Leonards-on-Sea; and The College, Guy's Hospital, S.E.

390 1894. Ticehurst, Norman Frederic, M.A., M.B., F.R.C.S., F.Z.S.; 35 Pevensey Road, St. Leonards-on-Sea.

1902. Townsend, Reginald Gilliat, M.A.; Buckholt, Dean, Salisbury.

1893. Trevor-Battye, Aubyn, F.Z.S.; Chilbolton, Hants.

1906. Tuke, Charles Molesworth; The Gate House, Chiswick.

Date of Election.

1864. Upcher, Henry Morris, F.Z.S.; Sheringham Hall, Norfolk.

395 1894. Ussher, Richard John, M.R.I.A.; Cappagh House, Cappagh, S.O., Co. Waterford, Ireland.

1907. Van Oort, Dr. Eduard Daniel; Museum of Natural History, Leyden, Holland.

1908. Vaughan, Matthew; Haileybury College, Herts.

1906. Vaughan, Lieut. Robert E., R.N.; H.M. Coast Guard, Tenby, S. Wales.

1890. Venour, Stephen; Fern Bank, Altrincham, Cheshire.

400 1884. Verey, Alfred Sainsbury; Heronsgate, near Rickmansworth.

1881. Verner, Col. William Willoughby Cole; Hartford Bridge, Winchfield, Hants; and United Service Club, S.W.

1902. Wade, Edward Walter; Vittoria Hotel, Hull.

1886. Wade-Dalton, Col. H. D.; Hauxwell Hall, Finghall, R.S.O., Yorkshire.

1895. Wallis, Henry Marriage; Ashton Lodge, Christchurch Road, Reading.

405 1881. Walsingham, Thomas, Lord, M.A., LL.D., F.R.S., F.Z.S.; Merton Hall, Thetford, Norfolk.

1899. Walton, Capt. Herbert James, M.B., F.R.C.S., I.M.S., C.M.Z.S.; c/o Messrs. King, King & Co., Bombay.

1872. Wardlaw-Ramsay, Lt.-Col. Robert George, F.Z.S.; Whitehill, Rosewell, Midlothian, N.B.

1896. Watkins, Watkin, F.Z.S.; Highfield, Harrow; and Wellington Club, S.W.

1903. Watt, Hugh Boyd; 3 Willow Mansions, Fortune Green Road, West Hampstead, N.W.

410 1906. West, Colin, F.Z.S.; The Grange, South Norwood Park, S.E.

1900. Westell, William Percival, F.L.S., F.R.H.S.; "Arvensis," Blandford Road, St. Albans, Herts.

1891. Whitaker, Benjamin Ingham; Hesley Hall, Tickhill, Rotherham.

1891. Whitaker, Joseph I. S., F.Z.S.; Malfitano, Palermo, Sicily.

1903. White, Stephen Joseph, F.Z.S.; Oakwood,Crayford, Kent.

415 1903. Whitehead, Charles Hugh Tempest; Deighton Grove, York; and 56th Rifles (Frontier Force), Sehore, Bhopal, India.

1887. Whitehead, Jeffery, ; Mayes, East Grinstead, Sussex.

1897. Whymper, Charles, F.Z.S.; 7 James Street, Haymarket, S.W.

Date of Election.

1898. Wiglesworth, Joseph, M.D., F.R.C.P.; Rainhill, near Liverpool.

1894. Wilkinson, Johnson; St. George's Square, Huddersfield, Yorkshire.

420 1896. Williams, Capt. Lionel Arthur, F.Z.S.; Junior United Service Club, Charles Street, St. James's, S.W.

1897. Wilson, Allan Read, B.A., M.B., B.Ch.; Bloxham, Oxon.

1888. Wilson, Charles Joseph, F.Z.S.; 34 York Terrace, Regent's Park, N.W.

1900. Wilson, Dr. Edward Adrian, F.Z.S.; Westal, Cheltenham.

1887. Wilson, Scott Barchard, F.Z.S.; Heatherbank, Weybridge Heath, Surrey.

425 1897. Witherby, Harry Forbes, F.Z.S.; 11 Hereford Mansions, Hereford Road, Bayswater, W.

1908. Witherington, Gwynne; Sonning, Berks.

1899. Wollaston, Alexander Frederick Richmond, B.A.; 31 Argyll Mansions, King's Road, Chelsea, S.W.

1902. Workman, William Hughes; Lismore, Windsor, Belfast.

1871. Wright, Edward Perceval, M.A., M.D., F.L.S., C.M.Z.S., Professor of Botany in the University of Dublin, Ireland.

430 1891. Wright, Thomas, M.D.; Castle Place, Nottingham.

1904. Wright, William Crawford; Roslyn, Marlborough Park, N., Belfast.

1895. Yerbury, Lt.-Col. John William (late R.A.), F.Z.S.; 8 Duke Street, St. James's, S.W.; and Army and Navy Club, S.W.

1889. Young, Capt. James B., R.N.; Tytherley, Wimborne, Dorset.

1897. Young, John Joseph Baldwin, M.A.; Richmond Park, near Sheffield.

Extra-Ordinary Members.

1899. Godwin-Austen, Lt.-Col. Henry Haversham, F.R.S., F.Z.S.; Nore, Hascombe, Godalming.

1860. Wallace, Alfred Russel, D.C.L., LL.D., F.R.S., F.Z.S.; Broadstone, Wimborne, Dorset.

Honorary Members.

1907. Allen, Joel Asaph, Ph.D., F.M.Z.S.; American Museum of Natural History, Central Park, New York, U.S.A.

1886. Ayres, Thomas; Potchefstroom, Transvaal, South Africa.

Date of
Election.

1890. Berlepsch, Graf Hans von, C.M.Z.S.; Schloss Berlepsch, Post Gertenbach, Witzenhausen, Germany.

1900. Collett, Prof. Robert, F.M.Z.S.; University Museum, Christiania.

5 1870. Finsch, Dr. Otto, C.M.Z.S.; Altewiekring 19c, Brunswick, Germany.

1894. Giglioli, Dr. Henry Hillyer, F.M.Z.S.; Reale Istituto d Studi Superiori, Florence.

1898. Goeldi, Dr. Emil A., C.M.Z.S.; Zieglerstrasse 36, Berne, Switzerland.

1893. Reichenow, Dr. Anton, C.M.Z.S.; Museum für Naturkunde, Invalidenstrasse, Berlin.

1903. Ridgway, Robert, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.

10 1890. Salvadori, Count Tommaso, M.D., F.M.Z.S.; Royal Zoological Museum, Turin.

Colonial Members.

1904. Campbell, Alfred J.; Custom House, Melbourne, Australia.

1908. Farquhar, John Henry Joseph, B.Sc., N.D.A.; Assistant Conservator of Forests, Calabar, Southern Nigeria.

1908. Hall, Robert, F.L.S., C.M.Z.S.; Curator of the Tasmanian Museum, Hobart Town, Tasmania.

1903. Legge, Col. W. Vincent, F.Z.S.; Cullenswood House, St. Mary's, Tasmania.

5 1905. Macoun, John, M.A., F.R.S.C.; Naturalist to the Geological Survey of Canada, Ottawa, Canada.

1905. Millar, Alfred Duchesne; 298 Smith Street, Durban, Natal.

1903. North, Alfred J., C.M.Z.S.; Australian Museum, Sydney, N.S.W.

1907. Swynnerton, Charles Francis Massy, F.L.S.; Gungunyana, Melsetter, South Rhodesia.

Foreign Members.

1900. Bianchi, Dr. Valentine; Imperial Zoological Museum, St. Petersburg.

1904. Blasius, Geh. Hofr. Prof. Dr. Wilhelm, C.M.Z.S.; Gauss-Strasse, 17, Brunswick, Germany.

Date of Election.

1880. Bureau, Louis, M.D.; École de Médecine, Nantes, France.

1906. Büttikofer, Dr. Johannes, C.M.Z.S.; Director of the Zoological Garden, Rotterdam, Holland.

5 1906. Buturlin, Sergius A.; Wesenberg, Esthonia, Russia.

1902. Chapman, Frank Michler; American Museum of Natural History, Central Park, New York, U.S.A.

1875. Doria, Marchese Giacomo, F.M.Z.S.; Strada Nuova, 6, Genoa, Italy.

1902. Ihering, Dr. Herman von, C.M.Z.S.; Museu Paulista, São Paulo, Brazil.

1886. Madarász, Dr. Julius von; National Museum, Buda-Pesth.

10 1903. Martorelli, Prof. Dr. Giacinto; Museo Civico di Storia Naturale, Milan, Italy.

1894. Menzbier, Prof. Dr. Michael, C.M.Z.S.; Imperial Society of Naturalists, Moscow.

1881. Meyer, Dr. A. B., C.M.Z.S.; Hohenzollernstrasse 17, Berlin, W. 10.

1905. Oberholser, Harry Church; Biological Survey, Department of Agriculture, Washington, D.C., U.S.A.

1900. Reiser, Dr. Otmar; Landes Museum, Sarajevo, Bosnia, Austro-Hungary.

15 1908. Richmond, Charles Wallace; United States National Museum, Washington, D.C., U.S.A.

1894. Schalow, Herman; Traunsteinerstrasse, 2^{1}, Berlin, W. 30.

1900. Stejneger, Leonhard, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.

1902. Sushkin, Dr. Peter, C.M.Z.S.; Imperial University, Moscow, Russia.

1896. Winge, Herluf, C.M.Z.S.; University Zoological Museum, Copenhagen.

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THE IBIS.

NINTH SERIES.

No. V. JANUARY 1908.

I.—*Further Notes on the Birds of Gazaland.*

By C. F. M. Swynnerton, C.M.B.O.U.

(Plates I. & II.)

I have already, in my former paper ('Ibis,' 1907, p. 30), mentioned some of the boundaries of Gazaland and have given a rough description of its high veld. A few further details may be of interest.

In its most limited sense, the term "Gaza" should be applied only to the somewhat thickly-inhabited tract in the neighbourhood of Beleni (inland from Lourenço Marques), which for long formed the head-quarters of the conquering Aba-Gaza. The country to the north, bounded roughly by the Buzi, the Lusitu, and the two Musapa Rivers, is more properly called Musapa; but, in practice, the latter name is seldom employed, the word "Gazaland" being invariably used by South Africans to indicate the whole province actually ruled and occupied (not merely raided) by the Aba-Gaza before their final subjection at the hands of the Portuguese, right up to the above-mentioned rivers. Gazaland lies chiefly on the Portuguese side of the present political border, but includes the Rhodesian district of Melsetter, and is bounded on the east by the sea.

Interest will be added to my notes on the distribution of local species by the fact that I have had occasion during the past year to wander further afield than for some seasons previously, and through a very varied country. My trips comprised a journey in September to Northern Melsetter, with the attempted ascent of one of the higher peaks of the Chimanimani (an undertaking which I was prevented by the weather from completing), two stays in the lower Jihu, and a four-hundred-mile tramp across the low veld to Beira and back (as shown in the map, Plate I.). This included a visit to the famous *Landolphia*-forests of the Madanda, whence the Mozambique Company draws a large proportion of its annual rubber-output. From an ornithological point of view, the trip was, on the whole, disappointing. It was undertaken at about the worst time of the year for travelling, and the heat was so stifling that I hardly ever completed a march without two or three of my natives, who were all picked men, falling out, and having to be brought on at the end of the day with relief in the shape of water and assistance. Forced marches were usually necessary; for not only was my time limited, but the road lay for the most part at some distance from the river, and water, which was obtained largely from stagnant pools in dry river-beds or from holes dug in the sand, was exceedingly scarce. Consequently, on reaching the day's destination, I often felt utterly fagged, and it required quite an effort of will to label and dissect the specimens and to write up the diary for the day, while, near the river, this difficulty was increased by the swarms of mosquitoes (chiefly *Anopheles*) which assailed us persistently throughout the evening. We travelled for the most part through scattered bush composed largely of two species of *Combretum* and an *Acacia* (probably *A. catechu*), of which the thorns were a great source of trouble to my bare-footed carriers; while *Albizzia amara* and the "Mukwakwa"—a fine *Strychnos*, the fruits of which enter largely into the food of the local natives—were in parts hardly less common. Towards the coast again these and the other commoner species of the open woods become intermingled, sometimes with Palmyra-palms, at other times (especially along the river and on the fertile soil east of the Idunda) with trees of far finer growth, such as the oil-yielding *Trichilia emetica,* a *Kigelia* with huge sausage-shaped fruits, *Sterculia Triphaca,* and others. The grass was for the most part fairly short, excepting on the river-banks, which were often clothed with the luscious growth of *Sorghum halepense* and *Anatherum muricatum,* while occasionally between Chibabava and the coast we passed through patches of dense bush, including a piece of true forest containing some fine Khayas (near *Khaya senegalensis*) and a number of magnificent straight-stemmed Sterculias on the Eocene limestone of the Idunda.

The portions of the Madanda forests which I visited are simply dense bush, averaging little more than twenty-five feet in height and composed chiefly of such low-growing trees as *Crossopteryx Kotschyana* and *Erythroxylon emarginatum,* the whole being bound together with a tangle of vines (*Landolphia Kirkii, Secamone zambesiaca,* a *Landolphia*-like *Salacia,* &c.). In their general style these forests are not unlike the denser thickets of the Jihu; but the latter contain no *Landolphia* to speak of and consist mostly of other trees, the three commonest being a *Brachylæna,* the wood of which is prized by the natives for bow-making, *Conopharyngia elegans,* and *Markhamia lanata,* with handsome yellow flowers and fibrous bark, commonly used as a substitute for rope, while throughout the more open jungle of the Jihu *Pterocarpus melliferus* is quite the commonest tree. At the time of my visit to the Kurumadzi, early in August, the clumps of *Leonotis mollissima,* which form such a characteristic feature of the grass-jungle, were in full bloom and swarming with birds of all kinds. The *Leonotis* is to the small birds of the Jihu what the "Guniti" (a large *Celtis* near *C. eriantha*) is to those of Chirinda, and during my twelve days' stay I added no less than a hundred and forty interesting specimens to my collection.

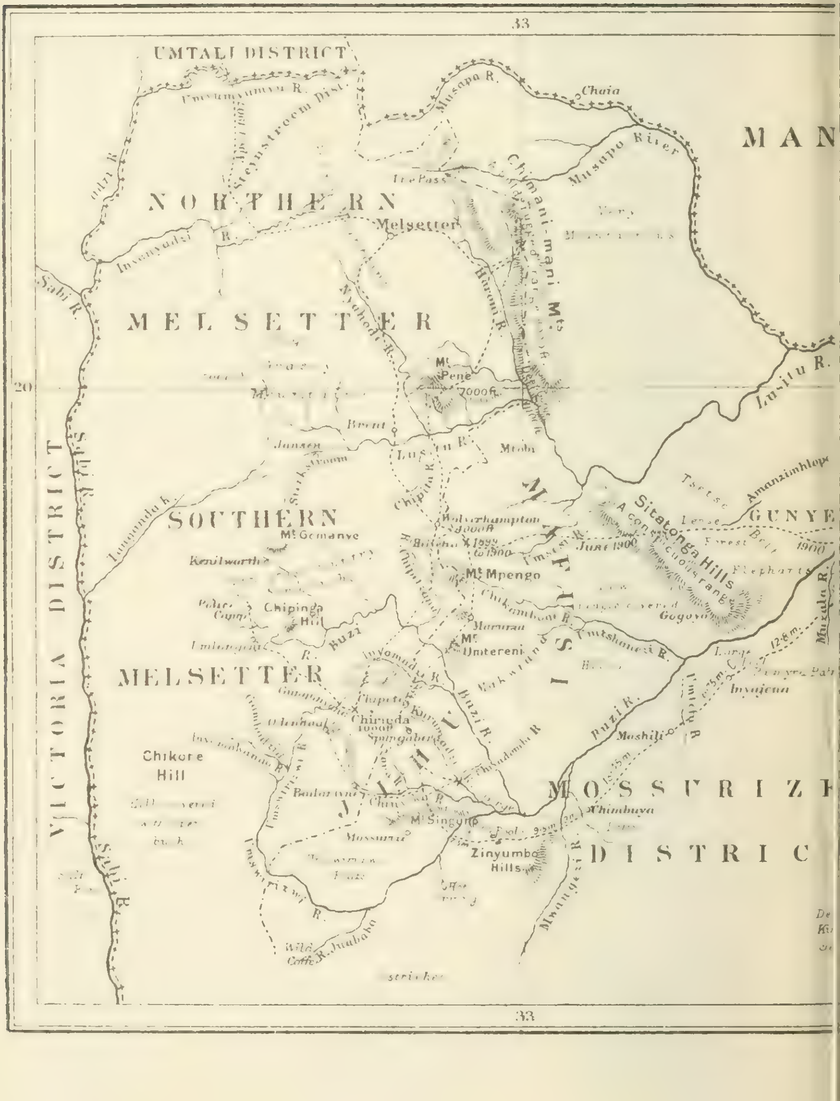
It may give some idea of the grass-jungle of the Jihu if I state that in order to get about (I was locating a concession) we had to cut our way everywhere with axes and hoes, and that the backs of my natives were often pouring with blood, the intense irritation of the "buffalo beans"

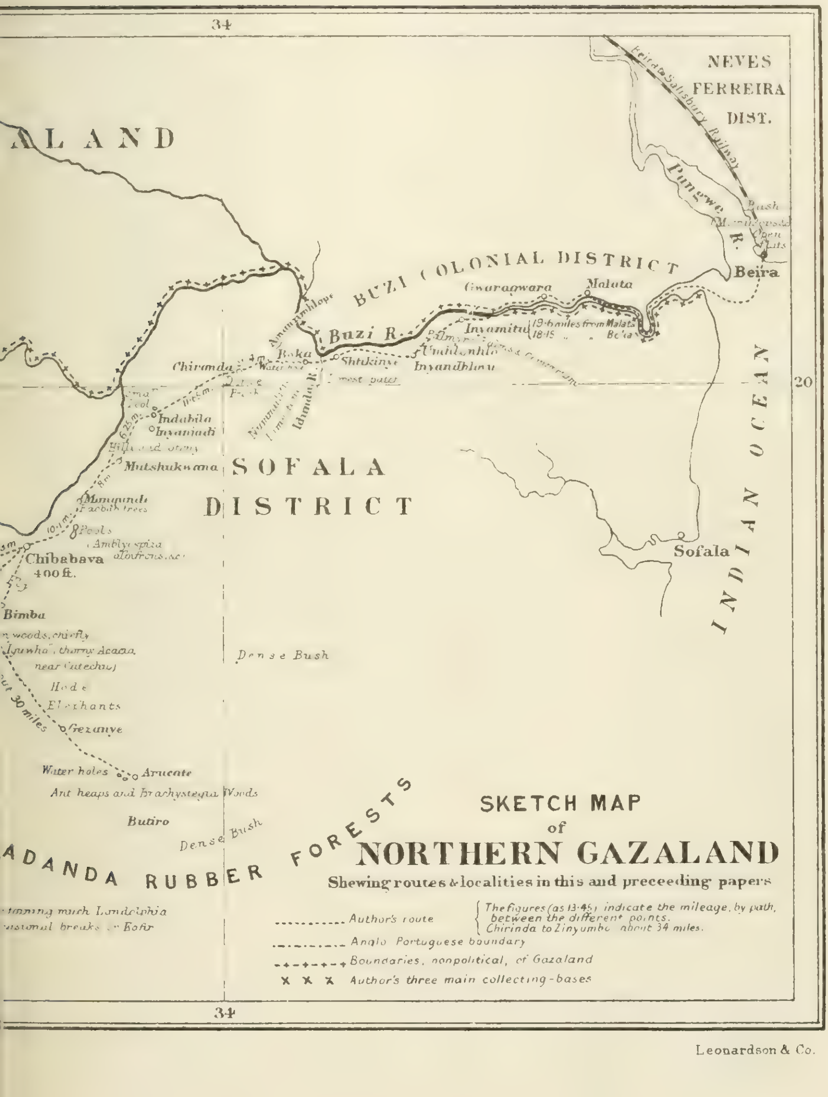
(*Mucuna coriacea*), which clustered everywhere in the tall grass and bush and let fall their velvety stings on us in showers as we worked, forcing them to scrape themselves with sticks and sharp-edged stones. The paths which I thus opened up were greatly appreciated by the birds: I counted fifteen individuals of *Spermestes nigriceps,* eight of *Lagonosticta jamesoni* (in pairs), one of *Laniarius olivaceus,* a pair of *Cisticola cinerascens,* and a few female Weaver-birds, all feeding together on the ground within a few yards; and this was the sort of sight which might be witnessed at intervals all along the paths every morning.

The scrub of the Northern Melsetter kloofs, to which I shall also have frequent occasion to refer, is composed mostly of *Budleia salvifolia,* a sweet-scented *Smithia* (near *S. Harmsiana*), a somewhat larger *Æschynomene,* and dense thickets of a curious *Sequoia*-like fern (*Gleichenia umbraculifera*) and of a widely-straggling *Choristylis.* The dense forest-patches of these higher elevations (5000 to 8000 feet) are very different in character to those of either Southern Melsetter, the Jihu, or the lowlands, being intermediate in the size of the trees between Chirinda and the latter, but with very few species in common with either: the most characteristic are *Curtisia faginea, Cussonia umbellifera,* a *Mæsa,* and, particularly on Mount Pene, a large handsome *Sizygium.* Two conifers are also met with in some numbers —*Widdringtonia Whytei,* which yields the most valuable timber in South-eastern Africa, and *Podocarpus milanjiana.*

I have already, in my former paper, mentioned Chirinda and the smaller forest-patches of Southern Melsetter; so far as I am aware, they are the only forests with really big trees in the country, some of these trees reaching to over a hundred and fifty feet in height.

In the accompanying map (Plate I.) will be found all the localities mentioned in this and my former paper. The initials "Rh." and "P." after each name in the following list stand throughout for "Rhodesia" and "Portuguese East Africa" respectively, and indicate the side of the border on which the species was found.


33
UMTALI DISTRICT
Umvumvumvu R.
Steynstroom Dist.
Musapo R.
Chaia
MAN
Musapo River
Chimani-mani Mts
Tre Pass
NORTHERN
Melsetter
Haroni R.
Nyahodi R.
Sabi R.
Inyanyadzi R.
MELSETTER
Mt Pene
7000ft
Lusitu R.
20
Brent
Jansen
Lusitu R.
Chipita R.
Mtobi
VICTORIA DISTRICT
Sabi R.
SOUTHERN
Mt Gemanye
Kenilworth
Wolverhampton
Sitatonga Hills
GUNYE
Tsetse
Forest
1900
June 1900
Mt Mpengo
Police Camp
Chipinga Hill
Buzi
Marurau
Mt Umtereni
Umtshonezi R.
Gogoyo
Elephants
Muzadu R.
MELSETTER
Chirinda
Springaberg
Buzi R.
Chikore Hill
Buzi R.
Moshili
Inyajena
MOSSURIZE
Mt Singuyu
Chimbuya
DISTRICT
Zinyumbo Hills
Mossurize
Mwangezi R.
Umswirizwi R.
Wild Coffee
Jnabaha R.
Sabi R.
33


34
NEVES FERREIRA DIST.
Beira-Salisbury Railway
Pungwe R.
Bush
Open flats
Beira
ALAND
BUZI COLONIAL DISTRICT
Gwaragwara
Malata
Buzi R.
Inyamitu
19·6 miles from Malata
18·15 „ „ Bela
Boka
Shtukinye
Inyandhlovu
Chirinda
Water
Mwangamhlope
Idunda R.
Indabila
Inyaniadi
Mutshukunma
SOFALA DISTRICT
Mnungundi
Baobab trees
Pools
Amblyospiza albifrons, &c.
Chibabava 400 ft.
Bimba
Dense Bush
Gezanye
Elephants
Water holes
Arucate
Ant heaps and Brachystegia Woods
Butiro
Dense Bush
ADANDA RUBBER FORESTS
Sofala
INDIAN OCEAN
20
SKETCH MAP of NORTHERN GAZALAND
Shewing routes & localities in this and preceeding papers
Author's route
The figures (as 13·45) indicate the mileage, by path, between the different points. Chirinda to Zinyumbo about 34 miles.
Anglo Portuguese boundary
Boundaries, nonpolitical, of Gazaland
X X X Author's three main collecting-bases
34

Leonardson & Co.

I have frequently heard the remark made that we possess few or no singing-birds in Africa. This argues a lack either of observation or of early rising; for I imagine that nothing finer could be heard in any country than the loud and varied chorus, not only of striking calls but of actual song, which arises from any well-jungled river-valley in Gazaland at about sunrise. After the usual preliminaries, sometimes long before dawn, on the part of *Pternistes humboldti* or the other Francolins, followed by an occasional warble from a Stonechat or Seed-eater, or the booming conversation of a party of Ground-Hornbills, the first *Cossypha heuglini*, just as dawn appears, sounds a *réveille*. Immediately a chorus of the songs of these delightful Robins—finer songsters, to my mind, than English Nightingales—springs from the jungle-clad slopes in every direction, and continues for half an hour or so, becoming more and more interspersed and finally replaced by the liquid Nightingale-notes of *Laniarius bertrandi* and the mellow calls of the various other Bush-Shrikes. Finally the Sun-birds (and a host of others) join in, perching high in the trees to catch the first rays of the rising sun, and descending with it till they again reach the *Leonotis*-blooms, when they proceed to the business of getting breakfast, and the burst of song gradually breaks off into the ordinary chatter of the day. The evening is the next best time; but during the day the songs are much shorter and more isolated, and this, combined with the fact that, at least in our part of Africa, the settler chooses the short turf of the higher hills for his homestead, while our song-birds prefer the jungle, leads to the erroneous idea that I have just mentioned.

I am indebted to Mr. David Odendaal for much intelligent help rendered during the past year, and take this opportunity to offer my best thanks to Mr. G. A. K. Marshall for his valuable assistance, to Dr. Rendle and Messrs. Moore and Baker for the great trouble they have taken in working out, at short notice, the plants which I had occasion to mention in these notes, and to Dr. Bowdler Sharpe for his kindness in identifying some of my birds.

My thanks are also due to Mr. D. M. Stanley for much interesting information.

The following list, which, together with a few mentioned in my last paper but not again in this, comprises about three hundred species, includes several further additions to the South African Fauna.

The nomenclature and arrangement, unless otherwise specified, are those of Mr. W. L. Sclater's 'Fauna of South Africa.'

The native names are given in the two local languages, Chindao and Singuni.

1. CORVULTUR ALBICOLLIS. White-necked Raven.

Singuni: "Iqugwana" (Zulu *q*) or "Ingwababa." Chindao: "Igungu."

Rh., P. A characteristic high-veld species, not appearing to extend in any numbers to the low veld of the east coast; to the north it finds its limit as a dominant species in Mashonaland, between Marandella and Salisbury, at the former of which places it is plentiful. It is the common Crow at Umtali. I have noted it in the Chimanimani Mountains and in the lower Jihu, but in the latter locality it appears to be somewhat scarce. It occasionally follows the plough; and two instances of its attacking young chickens have recently come to my notice. A male recently shot by Odendaal measured 20·62 inches in the flesh. A stomach which I examined contained mealies and small beetles.

2. CORVUS SCAPULATUS. Pied Crow.

Chindao: "Chigombe."

Rh., P. A pair of these Crows again built at Odendaal's homestead this season; and on two or three occasions during the past year I have seen them or recognised their peculiar broken croak. On Sept. 2nd one of a party of three, evidently passing through from the lowlands, descended and commenced to feed on some scraps at my doors; but I found them very shy, a great contrast to their behaviour at Salisbury. They appear to have better memories than many birds, for not only did the mate of one which I shot some years ago in Mashonaland follow me up to my house, wheeling above my head and croaking, but for three or four days afterwards, when going backwards and forwards to my work, I was constantly met by a Crow, presumably the same bird, which abused me energetically, flying above my head or settling in front of me on the road and allowing me to pass within three or four yards of it. Two eggs in my collection measure 46 by 32 mm., and are pale greenish grey in ground-colour covered with spots and small blotches of olive and underlying violet-grey. The nest was placed twenty feet from the ground in a large thorn-tree, and was small for the size of the bird, as well as remarkably well hidden. It was built externally of sticks and lined with a felt similar to that used by *Corvus capensis*, but much intermingled with grass and roots. A pair, I am informed by Mr. Brent, build annually near the junction of the Nyahode and Lusitu Rivers. In the low veld these birds quite take the place of the Raven, and I found them to be particularly plentiful in the neighbourhood of Gwaragwara and Malata, near the mouth of the Buzi.

3. CORVUS CAPENSIS. Black Crow.

Rh. Mr. Brent informs me that he has noted this Crow on the Lusitu, but that even there it is extremely uncommon. I have heard of no instance of its nesting in the district, though I have frequently taken its eggs in Mashonaland. In coloration they much resemble those of *Pycnonotus layardi*, and possess about the same range of variation, one type being very like that found in the English Missel-Thrush, but of course larger. The nests, usually placed in thorn-trees some nine to twenty-five feet from the ground, were smaller than those of the English Rook, and compactly built of small sticks and twigs, neatly rounded and interwoven, and lined with a thick warm felt of hair, feathers, and down. A stomach contained beetles, locusts, and mealies.

4. Buphaga africana. Yellow-billed Oxpecker.

Rh., P. This bird is called by the Amanguni "Ilanda," and by the Abandao "Ideira-ngombe" (*i. e.* "Ox-follower"), in allusion to its well-known habits.

5. Amydrus morio. Red-winged Starling.

Rh., P. Our commonest Starling, but at all times very local, being found in any portion of the district that offers the best food-supply at the moment. Throughout June and July 1906 its pleasing notes "Peoo! peoo!" or occasionally in flying "Chechipeoo! chechipeoo!" might be heard in and about Chirinda, where the ripening of the "Chisipi" crop of figs was the chief attraction in June, while later it took to following the locust-swarms in large flocks. On July 30th I noted a pair in the Jihu. The birds again appeared at Chirinda on September 2nd, and on the 8th I noted them on the Inyamadzi and on Mount Umtereni (Mafusi). In April of this year a large flock was haunting the neighbourhood of Melsetter itself; while in September 1906 I found numbers of them nesting in the crags of the Chimanimani Mountains.

A male captured last July, with a broken wing, shewed very little fear, readily taking locusts, grubs, and pieces of orange through the bars of its cage. Its "Peoo" was used, I noticed, both as a call and as a note of alarm when frightened. Length in the flesh (of a male) 12·9 inches.

6. Lamprocolius melanogaster. Black-bellied Glossy Starling.

P. I noted this bird on December 5th at Gezanye, between Chibabava and the Madanda forests and nearly ninety miles from the coast (*cf.* Shelley, B. Afr. v. p. 84), and again on the following day in the *Brachystegia*-woods bordering the rubber-forests at Arucate. Both were single individuals, probably breeding males. The length of my specimen in the flesh was 8·9 inches, and its irides shewed two distinct rings of colour, the inner bright gamboge, the outer orange. The stomach contained a smallish snail and fruits, apparently of *Clerodendron myricoides*.

7. Cinnyricinclus leucogaster verreauxi. Verreaux's Glossy Starling.

Rh., P. I found these Starlings going about singly or in small flocks in various localities in the low veld during December and January, all the way from Zinyumbo to the neighbourhood of the coast; also from Chibabava south to Arucate, where I obtained specimens in the *Brachystegia* bordering the Madanda. At the end of March 1907 they visited Chirinda and its neighbourhood in considerable numbers, attracted by the ripening of the Gumiti crop: I usually met with them in parties of from six to a dozen individuals.

The length of this bird in the flesh varies from 6·8 to 7·6 inches, five specimens giving an average of 7·17. The irides of adults are lemon-yellow, but in an immature bird they are dark brown ringed externally with lemon; the gape is yellow. Of five stomachs examined, three contained fruit only (*Celtis* and *Clerodendron myricoides*), one *Celtis*-fruits and insects, and one insects only.

Actual localities where noted: in the lowlands, Inyamita, Inyajena, Muzala, Umtefu, Mwangezi, Chibabava, Zinyumbo, Gezanye, Arucate; and in the high veld, Chirinda and its neighbourhood only.

8. Oriolus notatus. Andersson's Oriole.

Rh., P. In the middle of December and again in January I noted a few of these Orioles in full plumage in the higher trees bordering some large pools near Chibabava, all single individuals and very shy and unapproachable. In April of this year they were extremely common in the open woods near Chirinda, but those seen and shot during that month were in immature plumage and far tamer than those previously noted.

Of four birds in immature plumage, two measured 9·5 inches in the flesh, one 9·2, and the fourth 9, giving an average of 9·3 inches; and the three stomachs examined contained, respectively, five, eleven, and two hairy caterpillars. Bill black; irides dark brown; feet grey. The irides of an adult male were bright carmine and the bill reddish brown; while the stomach contained only beetles.

9. **Oriolus larvatus.** Black-headed Oriole.

Chindao: "Chimkurioku" (in imitation of one of its calls).

Rh., P. A resident species and common in the open woods, particularly in the autumn and winter, when single birds in immature plumage may constantly be met with, often travelling from tree to tree steadily in one direction. I was inclined to look on this as a partial migration, but have since sometimes found them travelling in a diametrically opposite direction to that of the day before. These birds of the year utter a flute-like whistle, rather well rendered by the natives as "Kuryo!," followed frequently by a harsh note (the final "ku" of its Chindao name). The adults have a wider *répertoire* of notes, most of them remarkably pleasant and flute-like, of which a mellow "Kawhee-kawhau!" is perhaps the commonest. They are not infrequently to be found in the high trees on the edge of Chirinda, and though at all times far less approachable than the immature birds, are in other respects not particularly shy, occasionally visiting my orchard or frequenting the Eucalypts at my homestead. I found them fairly common on the Kurumadzi in August, at Maruma in September, and in the same month in Melsetter; I have noted them, in fact, at a number of localities throughout Northern and Southern Melsetter and in the lowlands, particularly at Chibabava and Arucate and the country between these two places.

Out of six stomachs examined, all contained large and more or less hairy caterpillars (in one case as many as ten), and two contained large seeds as well. Measurements in the flesh: 9 inches (imm. male), 8·5 (imm. female), and 9·5 (an adult male).

10. **Hyphantornis nigriceps.** Black-headed Weaver-bird.

Chindao: "Ingozha."

Rh., P. A rather widely distributed species, confining itself, however, to the larger rivers and to grass-jungle, where colonies of its kidney-shaped nests may frequently be found slung from the twigs of the thorn-trees. On the 25th of November 1906, at Zinyumbo, I counted no less than 373 such nests in a single "Iguwha" (*Acacia* near *A. catechu*). There were numbers of birds in the tree, chirping, quarrelling, chasing one another, and generally making a great hubbub; hundreds of nests, old and new, lay about on the ground, with quantities of broken egg-shells—some of them pure white, others (the majority) pale blue, while others again were pale blue speckled and blotched with grey. The nests were strongly woven out of a tough grass, mostly pink in colour, roofed, many of them, with the leaves of the tree itself, and lined (after the manner of *H. jamesoni*) with the heads of *Tricholæna rosea* and other downy grasses. A typical nest, picked out from those littering the ground, was 6·45 inches long by 4·7 deep; diameter of opening 2 inches. In some instances the slightly projecting mouths were very curiously plaited; in others the mouths did not project at all. The birds probably resent the presence of other species in the neighbourhood of their colonies, for I saw a pair vigorously attacking a dark bird larger than themselves in a neighbouring tree. A few days later I noted a colony of Black-headed Weavers on an island in the Buzi, near Chibabava, their nests hanging in hundreds from the reeds and other growth (especially *Sesbania punctata*) bordering the water. Often several birds at a time could be seen hanging from the nests by their feet and fluttering their wings violently, while the whole colony set up an excited chattering. Two, six, or more would occasionally leave the island and fly off into the open woods, where I sometimes came across them scattered here and there searching for insects. Two of four stomachs recently examined have contained insects only (small beetles and grasshoppers), two both seeds and insects.

Localities: Jihu, Mafusi (Maruma and Chikamboge Valley), and various points in the low veld to within a few miles of the coast (Gwaragwara).

Of three males, two measured 6·65 inches each in the flesh, and the third 6·5.

11. Hyphantornis auricapillus. Shelley's Weaver-bird.
Ploceus auricapillus, Reichenow, Vög. Afr. iii. p. 79.

P. I met with this Weaver at a number of points in the low veld, including the Umtefu River and the country east of the Idunda River as far as Inyamita, as well as in that between Chibabava and the Madanda forests. I also very frequently came across the nests, of the same form as those of *H. nigriceps*, but at once distinguishable by their smaller size and neater construction. They were hung from the twigs of Acacias and other trees, often quite a number within the radius of a few hundred yards, but seldom more than three or four to a tree. At Chimbuya's, near the Umtefu, I took a nest containing two eggs on November 26th. It was slung, thirty feet from the ground, from a thin twig of *Diospyros* and had to be shot down; while near it were two other nests, one of which, at least, belonged to another pair of birds. Mine, which was quite a typical specimen, was 4·8 inches long by 4·2 deep and 3·3 broad, and was very neatly constructed of grass-blades, some of which had been green when inserted, and roofed with green Acacia-leaves and lined with fine grass-heads. The eggs were creamy white, with spots, short lines, and blots of purplish brown, and blotches (some of them large) of paler brown-madder; they measured 21 by 14·2 mm. Two stomachs examined each contained beetles only. A breeding male in my collection measured 6·1 inches in the flesh; bill black, irides bright orange, feet leaden grey. A non-breeding male had the bill yellowish brown, the lower mandible paler and pinker with a dusky tip, the feet of the same colour as the lower mandible, and the irides chestnut-orange.

12. Hyphantornis subaureus. Yellow Weaver-bird.

P. Large numbers of these Weavers were nesting along the Buzi at Chibabava at the end of November, the males frequently flying up into the air to display their brilliant yellow coloration. The nests were of much the same shape and materials as those of *H. nigriceps*, and were slung from the ends of the reeds and the drooping twigs of a shrub (*Sesbania punctata*) common at the water's edge. A male which I secured measured 5·9 inches in the flesh; its bill was jet-black, its irides were orange-red, and its feet light reddish brown. The stomach contained only a small portion of a beetle.

13. HYPHANTORNIS JAMESONI (Sharpe). Jameson's Weaver-bird.

Ploceus xanthops jamesoni, Reichenow, Vög. Afr. iii. p. 90.

Singuni: "Ihloka-hloka." *Sitagra capensis* of former paper.

Rh., P. A high-veld species which I have not so far observed lower than the Jihu and Mafusi's country. In Southern Melsetter it may often be found feeding amongst the high weeds in old gardens, and it builds both along streams and in grass-jungle, the nest in the former case being firmly bound to the side of a tall reed (or sometimes slung between two) by means of the shredded leaves of our common date-palm (*Phœnix dactylifera*). This material, tough and springy, also enters largely into the external construction of the nest, only a few heads and stems of grass being worked in besides. In tall grass-jungle, however, the nest is often entirely made of coarse grass-blades, and slung, by the centre of its convex side, from the slender outer twig of some tree. The interior is warmly lined, the dome more thickly than the bottom of the cup, doubtless with an eye to rain, with the fluffy white heads of a coarse-bladed grass (*Tricholæna rosea*) which springs up commonly in cultivated fields after abandonment. Several of these white fluffy heads almost invariably protrude from the porch and add an ornamental finish to a nest which is, in any case, by no means so neat as that of *Sitagra ocularia*, owing, partly, to the greater width of the palm-strips employed. Occasionally other grasses, especially a common *Diplachne*, are also used in the lining. In form the nest rather resembles that of

H. nigriceps, with the opening at one end of its lower, concave surface, and it varies somewhat in size: length 6·75 to 8·5, depth 4·6 to 5·3, and width from side to side 3·75 to 5 inches, the diameter of the opening ranging from 2 to 3·1 inches. The grass-built nests are usually larger and clumsier than the others. The eggs vary, some being white, others light blue, while a third type is light blue freckled throughout with dull violet and light and darker brown spots, somewhat bigger and more numerous, as a rule, about the larger end. The birds are shy and always make off at the first alarm, never returning to the nest until long after the intruder's departure. The bill of the male, in the breeding-season, is black, at other times dusky brown above with a paler pinkish or yellowish gonys; the feet are pale pinkish or purplish brown or grey, or dusky flesh-coloured; the irides gamboge (sometimes very deep), or, occasionally, ochreous or grey-brown.

14. SITAGRA OCULARIA. Smith's Weaver-bird.

Chindao: "Ijekete."

Rh., P. A common species along the streams and in grass-jungle, including in its local range the whole of the Jihu and Southern Melsetter, and portions of Northern Melsetter. Near Chirinda its nests may usually be found just inside clumps of dense bush, or else along the streams, suspended from the ends of the palm-leaves or the twigs of *Bridelia* and other trees. In this case they are usually neatly woven from narrow strips of the palm-leaves (*Phœnix dactylifera*), this being the only material employed except for the lining, which is formed entirely of the thin, somewhat tough fibres of the same leaves, neatly stripped out of them while still green. The entrance-tube varies greatly in length, there being sometimes, though rarely, none at all; and the mode of attachment also varies, the weaving being occasionally carried up into the supporting leaf for nine or ten inches. The leaves of the common reed (*Phragmites communis*), similarly shredded, are also sometimes employed, or, when far from water, stiff grass-blades.

Measurements: diameter of entrance 2·2 inches, that of cup (externally, from side to side) 3·25; front to back, including upper portion of tube, 5·25; depth of cup, external, exclusive of attachment, 4·7 inches. The nest proper varies less in form and measurements than in appearance, its degree of neatness depending entirely on the fineness of the strips employed.

A second type of nest, of which I have taken two (shooting the bird each time to make sure of its identity), though at first sight very different in appearance, varies actually from the more usual type rather in method of suspension than in shape. It is entered by a horizontal tunnel which is sewn to the side of the nest, and is thus equivalent to an ordinary nest suspended by its side. The eggs are usually bluish white, with blotches and spots, most plentiful about the larger end, of light grey, each spot being often paler in the centre than at the margins. Sometimes brown spots are intermingled with the grey, but I have never found the red-spotted variety described by Dr. Stark (Fauna of S. A. vol. i. p. 68). They measure from 20 to 22·7 mm. in length, by from 14 to 15 in breadth, the commonest combination being 20 by 15. The birds leave the nest at once when disturbed, keeping low along the stream till out of sight, or disappearing into the denser bush. They continue to take quite a pride in the appearance of their home even after its completion, and I have watched a sitting hen leave the tube and climb about all over the nest, re-arranging a strip here or pushing in a loose end there.

A male in my collection measured 6·8 inches in the flesh; its bill was black, its feet were bluish grey, and its irides light yellow. Two stomachs examined contained only insects (beetles and spiders).

15. Sycobrotus stictifrons. Spot-headed Weaver-bird.

Rh., P. To be found wherever the bush is sufficiently dense, in high veld or low; I have myself noted it in the small forest-patches of the Chikamboge Valley, in the Madanda forests, and near Chibabava, where it was breeding last December. In Chirinda it may often be seen during the latter half of October and early in November, usually in pairs, when it frequents the staminate individuals of a common beech-like *Croton*, which is then in full bloom, moving about quietly amongst the flower-laden twigs and gathering in a great harvest of insects; occasionally, while thus engaged, it utters a loud call, midway between a Weaver's "spink" and the creaking note of a Drongo.

The length of this Weaver in the flesh varies from 6·5 to 6·6 inches.

16. AMBLYOSPIZA ALBIFRONS. Thick-billed Weaver-bird.

P. I found this Weaver in some numbers at certain large pools a few miles east of Chibabava, flying about amongst the tall sedge (*Cyperus* sp.) or settling, sometimes several together, on the smaller trees along the margin. Occasionally a party would fly right away into the scattered open bush, doubtless to feed. Numbers of their nests, inverted ovals of dry grass, neatly woven, and attached, after the manner of a Reed-Warbler or Bishop-Bird, to the tall upright *Cyperus*-stems, could be seen in the deeper pools, but were quite inaccessible owing to the crocodiles.

A breeding male, shot on December 12th, measured 7·9 inches in the flesh; both mandibles of bill were black throughout, the irides brown, the feet dull grey. The stomach contained seeds only. Actually this specimen (No. 1169), in the extent of white on its forehead and the darker brown of its head, approaches very closely to the more northern *A. unicolor*.

17. PYTELIA MELBA. Southern Red-faced Weaver-Finch.

Rh., P. I have found this Weaver on one occasion only, on November 24th (near the Chinyika River, Jihu), when I shot a male, nine feet from the ground in a small thorny *Acacia natalitia*, beside its unfinished nest, a light rounded structure of fine branching grass-heads stripped of their seeds. Bill very bright red, feet vandyk-brown, irides pinkish orange, and lower eyelid, closed, light blue-grey. Length in the flesh 5 inches.

18. Pytelia nitidula. Hartlaub's Red-faced Weaver-Finch.

Rh., P. Occasionally seen in Chirinda, and shot, once, in thick bush, on the Kurumadzi in August 1906. On the 2nd of September I secured a male, already in full breeding-plumage, in Chirinda; it was uttering a note much resembling that of *Erithacus swynnertoni,* for which species I should certainly have taken it had the sound not proceeded from fairly high in the trees, whither I have never noted the Robin to ascend. It was being answered by the same note. The bill is black, the gonys and the tip of the upper mandible being strongly tinged with red in the breeding male; the feet are pale brown, in one specimen tinged with yellow; and the irides (in the Kurumadzi specimen, apparently the only one in which they were noted) dark brown. In an immature bird the base of the gonys was pale pinkish and the feet very pale greyish pink.

Length in the flesh (of three specimens measured) from 3·5 to 3·75 inches.

19. Lagonosticta brunniceps. Little Ruddy Waxbill.

P. During my stay at Chibabava in December last, a party of seven, including two cocks, became very tame and friendly; they constantly frequented my verandah for the sake of the waste from my meal-bags, and would boldly enter the hut in search of crumbs. A neighbouring mulberry-hedge was their refuge when disturbed and they also roosted in it regularly at night. Later on I noted this Waxbill at Gezanye, a few miles north of Arucate.

My two specimens appear to belong to the southern form, separated by Capt. Shelley as *L. rendalli* (B. Afr. iv. p. 260). They measured respectively 3·8 (♂) and 3·75 inches (♀), in the flesh. In both the upper mandible was blackish with some red on the sides, and the lower mandible red (carmine-pink) with a median line of black. The stomachs contained seeds and the elytra of a small beetle.

20. Lagonosticta rhodopareia. Heuglin's Ruddy Waxbill.

Lagonosticta rhodopareia Reichen. Vög. Afr. iii. p. 200.

Rh., P. More or less plentiful throughout, but especially in the Jihu, and invariably found singly, in pairs, or, at most, in small family parties, usually in long grass or the high weed-growth of abandoned cultivated fields. I have never noted it in flocks. I had particularly good opportunities of observing these Waxbills in August and again in November, on the Kurumadzi, where, next to *Zosterops anderssoni*, they were the commonest birds, keeping entirely to the high grass-jungle, always in pairs, and continually taking short flights through the grass and uttering a rapid trickling note. They at once took advantage of my cleared paths, feeding all along them and allowing an approach to within five or eight yards when thus engaged. The pairs keep close together, and on one occasion I trapped a male and female simultaneously under the same stone. Localities specially noted: Jihu, throughout; Southern Melsetter, practically throughout; Mafusi's (Umtereni, Maruma, Chikamboge Valley, and the hills to the north of this valley); Northern Melsetter (Lusitu, Nyahode and Haroni rivers); Chibabava, in the neighbourhood of the pools already mentioned; and, at intervals, from Chibabava to Gwaragwara (see Pl. I.). The length of this bird in the flesh varies from 4·25 to 4·6 inches, six specimens thus measured giving an average of 4·46. The upper mandible is dusky grey and the lower paler, sometimes whitish, the whole strongly tinged with blue; the feet are light ashy grey, the irides brown. In the immature bird the upper mandible and the tip of the lower are blackish, the base of the latter pinkish white.

21. LAGONOSTICTA NIVEO-GUTTATA. Peters's Ruddy Waxbill.

Rh., P. Fairly common at Maruma and in the Chikamboge Valley, as well as about Chirinda; but particularly plentiful on the Kurumadzi and in other parts of the Jihu, where it goes about singly or in pairs, or, occasionally, in threes or fours, in the grass-jungle, particularly about the edges of the denser bush. Its habits, as also one of its notes, greatly resemble those of *L. rhodopareia*. In length it shews considerable variation, 4·9 and 5·85 being both measurements of males, and the four specimens of which I have kept a record shew an average of 5·1 inches (in the flesh). Bill, culmen and point black, base silvery blue; feet light blue-grey; irides deep chestnut-brown; somewhat wattled eyelids, blue.

22. ESTRILDA ASTRILDA. Common Waxbill.

Chindao: "Chiwanza-buri."

Rh., P. Plentiful throughout the country, usually in winter in large flocks. A few high-veld localities for this species which I happen to have noted specially are: in Northern Melsetter, Melsetter itself and the Nyahode and Lusitu Valleys; in Southern Melsetter, the Inyamadzi Valley and the neighbourhood of Chirinda; Mounts Umtereni and Maruma in Mafusi's country; and the Kurumadzi. In the lowlands I found it commonly in parties in the dense sedge surrounding the pools near Chibabava in December and January, and also in the reeds bordering the river Buzi at Inyamita's.

Six adult birds averaged 4·4 inches in the flesh, varying only from 4·3 to 4·5. An immature bird measured 3·5 inches; feet sepia-coloured.

23. ESTRILDA INCANA. South African Grey Waxbill.

P. On August 4th of last year I shot one example out of a small party of these Waxbills at the edge of some dense bush near the Kurumadzi. They were searching the *Leonotis*-flowers after the manner of White-eyes, but in this case, as was evident from their stomach-contents, for the sake of the seeds, not insects. My specimen, a male, measured 4·2 inches in the flesh: its bill was light blue, with the commissure and tip dusky; the feet were blackish, and the irides deep crimson-brown.

24. ESTRILDA CLARKII. Orange-breasted Waxbill.

Estrilda clarkei, Shelley, B. Afr. iv. pt. 1, p. 209.

Rh., P. Early in June of last year a flock of a dozen individuals was to be seen daily for some time in the neighbourhood of a small stream near Chirinda, all in winter plumage, while later in the same month I noted a similar party in the grass-jungle close to the Chinyika River, at a point about ten miles south of Chirinda. Finally, on April 25th, I shot a male in full plumage in the Nyahode Valley, Northern Melsetter. It kept flying in front of me for several hundred yards, constantly settling and feeding in the road, and then rising up and moving on again for a short distance when I caught it up. Its bill was crimson with a dusky culmen, its feet were light vandyk-brown, and its irides orange; length in flesh 3·7 inches. The length of three females was 3·5 each: bill brown-madder, brightest on the sides, culmen dusky; feet brownish grey or pale pink; iris orange or orange-vermilion. The two adult males in my collection are more deeply tinged with orange on the breast than are any of the South African or Nyasaland skins in the British Museum. In this respect they come halfway between this form and typical *E. subflava* from North Tropical Africa.

25. Estrilda angolensis. Blue-breasted Waxbill.

P. A common low-veld species, particularly from Chibabava to the coast and south to the rubber-forests, where I found it going about in pairs in the Kafir clearings. I noticed a bird carrying nesting-material at Bimba's in December. Other localities specially noted were Chibabava (in rubber-plantation and in open wood), Mangunde, Muchukwana, Chironda, Idunda River, Umhlonhlo, and Gwaragwara. The specimen in my collection measured 4·9 inches in the flesh; its bill was light purple with a blackish commissure and tip, and its irides were reddish brown.

26. Estrilda kilimensis. Kilimanjaro Waxbill.

Estrilda kilimensis, Shelley, B. Afr. iv. pt. 1, p. 238.

Rh., P. This species appears to prefer rank grass in the vicinity of water, the two localities in which I have noted it most frequently being a small swamp near Chirinda and a larger one, rich in weed-seeds owing to its having been under cultivation in recent years, at the head of the Chiyadombe, a small Jihu stream. It goes about as a rule in pairs or small parties, though I once met with a solitary female, and it not infrequently settles on trees. I have only once found this Waxbill at any great distance from water. In Northern Melsetter, too, I noted it on one occasion only, a party of three insect-hunting in the branches of a large *Brachystegia*, at an elevation of 6500 feet in the Chimanimani Mountains, in September. Six birds, measured in the flesh, averaged 3·8 inches, with a variation of from 3·6 to 3·9 inches: the irides were always brown in my specimens, usually dark, and never with any trace of red; the feet deep sepia-coloured. As the male, so far as I know, always resembles the female in lacking the black cheeks of *Estrilda bocagii* (Shelley), our local form of this Waxbill is evidently referable to *E. kilimensis*. Its extreme south-eastern range was previously the Nyika plateau in Nyasaland.

27. SPERMESTES SCUTATUS. Hooded Weaver-Finch.

Chindao: "Chinyamdzûruru" (applied to many of the Waxbills, &c.)

Rh., P. By no means an uncommon bird. A flock will sometimes frequent a homestead for months together, living on the waste from the mill or haunting the spot where the dishes are washed. When disturbed these birds rose with a twittering chorus into the nearest trees, but if I halted and remained perfectly quiet they quickly came down again and fed all round, venturing right up to my feet. They are destructive to wheat. I found them very plentiful and very tame on the Kurumadzi, going about in large flocks in the grass-jungle and feeding almost entirely on grass-seeds. The upper mandible of the bill is blackish, the lower pale blue-grey or white tinged with blue; the iris is dark grey-brown; the feet are dusky. Seven specimens measured gave an average of 3·87 inches in the flesh, the extremes being 3·6 and 4 inches.

28. SPERMESTES NIGRICEPS. Rufous-backed Weaver-Finch.

Rh., P. Common on the Kurumadzi in large flocks, and wonderfully tame and fearless. I have on several occasions approached to within a few yards of them, as, huddled side by side, four or five to a grass-stem, they watched me without the slightest sign of fear or mistrust. On one occasion I took special note that, had I been murderously inclined, I could have bagged more than thirty at a single shot. The Jihu and the grass-jungle surrounding Chirinda are at present my only two localities for this species, but I have little doubt that it will be found throughout the country wherever similar conditions prevail. Five adults gave an average in the flesh of 3·87 inches, varying from 3·75 to 4·12, but an immature bird measured only 3·5 inches. Bill pale blue-grey, the culmen somewhat dusky; irides deep reddish brown; feet dusky grey or grey-brown.

29. QUELEA QUELEA. Red-billed Weaver.

Rh. At the end of August of last year I secured five specimens out of a flock which frequented my orchard (near Chirinda) for a few days. All were in winter plumage, and all the five stomachs contained seeds only. The bills were vermilion, the culmen, particularly towards the point, being tinged with dusky. Six specimens measured (including one obtained since in the same locality) gave an average length, in the flesh, of 5·06 inches, with a variation of from 4·9 to 5·2 inches.

30. PYROMELANA ORYX SUNDEVALLI. Northern Red Bishop-Bird.

Pyromelana sundevalli, Shelley, B. Afr. iv. pt. 1, p. 98.

A dense mulberry-hedge beside my hut at Chibabava was occupied by a party of these birds. A male (presumably) would frequently utter a song like the rattling of a steel watch-chain, when the females would immediately flock to the spot, perching on the twigs all round, while he himself remained concealed in the foliage. Usually, however, they were to be seen feeding on the open ground along the hedge, apparently chiefly on insects, and moving either at a walk or by a succession of rapid hops; once a female jumped eagerly aside after a good-sized grasshopper. I also occasionally saw them in the open woods and near the river, while at a series of large sedge-bordered pools a few miles from Chibabava they were particularly plentiful, and the males, flashing about in the sunshine and "rattling their little chains" amongst the sedge, were one of the characteristic features of the spot. Though it was already the end of November many of them appeared not to have yet completed the change to breeding-plumage. Two males measured 5·1 inches each in the flesh and two females 4·8 each. The stomachs examined contained seeds, beetles, a spider, and other insects.

31. PYROMELANA FLAMMICEPS. Fire-crowned Bishop-Bird.

Pyromelana flammiceps, Shelley, B. Afr. iv. pt. 1, p. 104.

I am not sure whether it is this or the preceding species that is the common Red Bishop-Bird of the Gazaland highlands. I noted *P. flammiceps* in the reeds bordering the Buzi at Inyamita, and I have in my collection two males: one shot in the Chikamboge Valley on August 20th, 1899; and a second which was brought to me at my Gungunyana homestead in May 1906, together with a number of other live seed-eating birds which had been trapped by a native in the neighbourhood.

This species has not previously been recorded from further south than the Zambesi River, where it was obtained by Kirk, Alexander, and Stoehr.

32. PYROMELANA CAPENSIS XANTHOMELÆNA.

Chindao: "Chikwea" (applied also to the Red Bishop-Birds).

Rh., P. A species common enough throughout all the portions of Gazaland which I have yet visited, high veld and low, including the lower slopes of the Chimanimani Mountains, where I found males in intermediate plumage at the end of September. In the breeding-season the male may often be seen perched alone on the top of some small tree. This species, like so many others, shews a decided preference for grass-jungle, but even where this is not available it by no means confines itself to the neighbourhood of water, as in parts of Mashonaland. The nests are commonly attached to the stems of rank reed-grasses (*Sorghum nutans* and a *Pennisetum*), clumps of which commonly grow on ant-heaps or even, with subsoil moisture, on the sides of hills; they are large for the size of the birds. One in my collection, taken at Gungunyana, measures about 7·5 inches in length by 3·5 in diameter, and is a handsome inverted oval, domed and coming to rather a point at the top, with the opening, 1·7 deep by 1·3 inches across, about halfway down. It was slung by its front to two thick upright reed-stems, one just on each side of the opening, and was woven throughout with wonderful neatness from a clean and fairly tough whitish bark-fibre, in appearance much like that of our common *Triumfetta*, which was fairly abundant in the vicinity of the nest. It contained only one egg, pure white, with spots and blotches (somewhat massed at the larger end) of rather deep reddish brown, and measured 22 by 15 mm.

33. Coliopasser ardens. Red-collared Widow-Bird.
Singuni: "Isakabuya."

Rh., P. One of our commonest birds in many parts of Melsetter and the Jihu. In the latter district I found it going about in the grass-jungle in large flocks, all in winter plumage, in August, and feeding especially, like so many others, at the *Leonotis*-clumps. The male in breeding-plumage shares the habit of *P. xanthomelæna* of remaining perched conspicuously on the summit of some isolated *Parinarium* or other tree in the open grass-veld. In full breeding-plumage my males have varied from 12·25 to 15·75 inches in the flesh. Bill of female and non-breeding male, upper mandible brown with a dusky culmen, lower pale greyish. Of nine stomachs the contents of which I have noted, three contained insects (beetles and a larva) and the remainder seeds only.

34. Vidua principalis. Pin-tailed Widow-Bird.
Chindao: "Chinyampimbiri."

Rh., P. Found throughout the high veld, and noticed in flocks, entirely in winter plumage, on the Kurumadzi in August; also, in December, at Chibabava and at one or two points between that place and the coast. The females in my collection varied from 5 to 5·4 inches in the flesh, and a breeding male measured 12·25 inches. Bill in the non-breeding male blackish tinged with red, most strongly on the basal half of the gonys, and in the female light brown; feet pale flesh-coloured in the hen, black in the breeding male.

35. Vidua paradisea. Paradise Widow-Bird.

Rh. I noted one of these striking Widow-Birds on the hills near the upper Buzi, 3500 ft., early in April of last year, and another in the bush to the south of the Umvumvumvu on the 30th of the same month; the latter was flying high above the trees with short forcible undulations, quite a long and strong flight for a bird with so disproportionate a tail.

36. Hypochera funerea. Black Widow-Bird.

Rh., P. I noted this Widow-Bird several times during my stay in the Jihu in August, usually in flocks of from twelve to twenty individuals, of which from one to four would be in the full black plumage. It is perhaps noteworthy that its nearest relatives, *Vidua principalis* and *Coliopasser ardens,* were at that time to be found only in winter dress in the same locality. It was probably breeding, as the testes of my specimens were well developed. Occasionally a solitary male, in the black plumage, would join the path-feeders and shew considerable tameness, though I found the flocks (which were feeding in old cultivated ground, and would rise into the branches of large and, preferably, bare trees on being disturbed) very unapproachable. Length in the flesh of the breeding male 4·85 inches; bill white (in one specimen tinged with pinkish grey); feet whitish tinged with pink.

37. Petronia petronella. South-African Rock-Sparrow.

Rh., P. I shot one of these birds at Melsetter on September 24th. It was perched on the top of a small tree, uttering a loud, ringing chirrup, rapidly repeated for a long time on end: "Cheu-cheu-cheu," &c. I subsequently came across the species again on the Kurumadzi, and on December 19th secured a third specimen at Chironda, on the lower

Buzi. The feet in each case were dull leaden grey; the bill, upper mandible and point of the lower dull sepia-coloured, the rest of the gonys whitish or pale pink. Two stomachs examined contained larvæ and beetles only, no seeds. Length in the flesh 6·5 inches.

38. POLIOSPIZA GULARIS. Streaky-headed Seed-eater.

Rh. On the 12th of July, 1906, I shot one out of a party of five or six of these Seed-eaters which had settled in the branches of a young Croton in my garden. Odendaal has since sent me a further specimen shot by himself in the same locality.

39. SERINUS SULPHURATUS. Large Yellow Seed-eater.

Rh. Mr. D. M. Stanley writes to me that a Canary obtained by him at Helvetia has been identified by Mr. W. L. Sclater as *Serinus sulphuratus*.

40. SERINUS SHARPII. East-African Yellow Seed-eater.

Serinus sharpei, Reichenow, Vög. Afr. iii. p. 266.

Rh., P. This is one of our commonest birds throughout Southern Melsetter and the Jihu. I have also noted it at various points in the Mafusi district, in the Lusitu and Nyahodi valleys in Northern Melsetter, and at an elevation of about 6500 ft. in the Chimanimani Mountains, where, in September last, I found it frequenting the *Proteas* and *Brachystegias* in some numbers. In the neighbourhood of Chirinda it appears to be particularly partial to sunflowers or old weed-covered lands, and on the Kurumadzi to the *Leonotis*-clumps, perching below the whorls of bracts and extracting the seeds; both there and elsewhere it goes about in parties or flocks, sometimes of considerable size, during the winter months. This Canary is a very early songster, commencing sometimes before dawn.

I found a nest on the 4th of September containing three recently laid eggs. It was four feet from the ground in the middle of a bunch of young custard-apple shoots (*Anona senegalensis*), a flimsy structure of small roots and bents of *Asparagus angolensis* and other herbs, lined somewhat scantily with the soft downy leaves of a common everlasting

(*Helichrysum nitens*). It measured externally 3·25 inches in diameter and 2·7 in depth, the cup itself being 2 inches across and 1·75 deep. The bird always left the nest at once on being approached, but returned immediately the intruder commenced to move away. The eggs were pure white, with small spots and thin short streaks of deep sepia, some of them practically black. Three of my specimens measured from 5·6 to 5·9 in the flesh, and one that was abnormally small 5 inches only. Bill horn-brown, the gonys paler and tinged with pink or yellow; iris brown; feet dusky brown or blackish.

This species was previously supposed to range from the Victoria Nyanza only to the Zambesi, where Kirk obtained a specimen at Tete.

41. SERINUS MARSHALLI. Marshall's Seed-eater.

Serinus marshalli, Shelley, B. Afr. iii. p. 201.

Rh. A single specimen of this Canary has been secured by Mr. Stanley at Helvetia, in the Mafus country; it was identified by Mr. W. L. Sclater.

42. SERINUS ICTERUS. Eastern Yellow Seed-eater.

Rh., P. One of our commoner birds. In September I found it in some numbers at Maruma, where, with *S. sharpei*, it was frequenting the coffee- and banana-plantations; also at Mount Umtereni and in other parts of Mafusi; and, in July, I found it going about in very large flocks both in the upper Jihu and on the Kurumadzi. Here, when busily feeding amongst the *Leonotis*-stems, individuals repeatedly allowed me to approach to within six or seven feet, and even then would move on only a few yards when disturbed. Solitary birds may sometimes be seen sitting alone in the higher branches of a tree, piping continually "Tsiyam-tsiyam-tsi! tsiyam-tsiyam-tsi!" in a most monotonous fashion. In common with *S. sharpii*, this species is very destructive to the wheat- and rice-crops. In the lowlands I found it to be common at Chibabava and thence to Arucate, as well as in the Kafir clearings and other more or less open spaces in the Madanda forests. My seven specimens of this Canary averaged 4·5 inches in the flesh, with a variation of from 4 inches to4·9.

43. Emberiza flaviventris. Golden-breasted Bunting.
Chindao: "Chiherehere."

Rh., P. I have noted this Bunting in the following localities:—Northern and Southern Melsetter, wherever open woods occur; the upper Jihu; Maruma and the Chikamboge Valley; and the Mwangezi River. I usually found it searching for food on the ground, whence it rose into the nearest tree on being disturbed.

44. Emberiza major orientalis. Shelley's Bunting.

Rh. I shot a male of this handsome Bunting in the Lusitu Valley, Northern Melsetter, on September 19th, and my assistant, Mr. David Odendaal, has recently sent me an immature bird from the neighbourhood of Chirinda. I expect it to prove nearly as common as the preceding species, as I feel sure that I have passed it by on several occasions. Length in the flesh (of adult male) 6·6 inches. The stomach contained a spider, a smallish bug, and other insects; no seeds.

45. Fringillaria tahapisi. Rock-Bunting.

Rh. Southern Melsetter, particularly near Chirinda, and the upper Jihu are at present my only localities for this species. A stomach examined some time ago contained seeds, beetles, and caterpillars.

46. Mirafra africana. Rufous-naped Lark.

Rh. I saw several of these Larks on the hills between the Lusitu and Nyahode Rivers in April last, perching singly on the upper twigs of a common shrubby *Smithia* with scented foliage.

47. Mirafra cheniana. Latakoo Lark.

Rh. I shot a female of this species on the 18th of September near Helvetia homestead on a recently-burnt patch of grass, at an altitude of nearly 4000 ft. It was engaged in flying a short distance and settling, flying up again and settling, and so on. It measured in the flesh 5·75 inches, and its stomach contained beetles, a portion of a Mantis egg-case, and some very small seeds.

48. Mirafra fischeri. Fischer's Lark.

I saw four or five of these Larks early one morning in December 1906 when crossing the low stony hills near Muchukwana's (on the lower Buzi), recognising them by their peculiar crackling flight. A male shot on June 2nd was already breeding, to judge by the development of the testes. Bill brown above, pale pink below; feet brownish pink.

49. Tephrocorys cinerea. Red-capped Lark.

Rh. Stanley and I, in September 1906, found numbers of these Red-capped Larks, singly or in pairs, on the higher hills all the way from the Chipetzana River to the Lusitu, wherever the grass had been burnt. They were taking short flights into the air, singing and settling again, running through the newly-sprung grass in search of food, or standing on small ant-heaps with frequent Pipit-like jerks of the tail. Two males which I secured measured respectively 6·2 and 6·35 inches in the flesh; base of gonys dull white, rest of bill blackish; irides greyish brown; feet brownish white. Both stomachs contained seeds and grit only. Odendaal has since (early in last May) secured a specimen near Chirinda.

All three examples correspond closely to Reichenow's description of *T. c. saturatior,* though an examination of the northern specimens in the British Museum hardly tends to confirm the validity of the subspecies.

50. Macronyx croceus. Yellow-throated Long-claw.

Rh., P. Throughout Northern and Southern Melsetter, nearly always in pairs; noticed in the low veld on the Umtefu River, and again near the coast. It may often be found frequenting cultivated fields.

When flushed it usually flies to some small tree close by, on or near the top of which it perches; in taking longer flights it often introduces quite an attractive stroke, which reminds one of the action of the legs in swimming, suddenly spreading its wings out straight and stiff to their fullest extent and repeating this stroke many times in succession, sometimes for a whole flight.

Four birds gave an average of 8·51 inches in the flesh, ranging from 8·12 to 9·1.

51. Anthus lineiventris. Stripe-bellied Pipit.

Rh. Like the Rock-Thrushes, this Pipit is comparatively plentiful in the "Munzhanshe" (*Uapaca*) groves which cover the northern shaly slopes of Chirinda, and resembles them further in the fact that it is usually found feeding on the ground and flies straight up into the nearest tree on being disturbed. Iris rather light umber-brown; upper mandible of bill sepia or vandyk-brown, lower pale grey, sometimes tinged with pink; feet pale brownish or purplish pink. Two males measured 6·75 and 7 inches, respectively, in the flesh.

52. Anthus trivialis. Tree-Pipit.

Rh. A regular summer visitor. It had not arrived on November 15th, when I left home; but I found it to be very plentiful in the neighbourhood of Chirinda on my return thither from Beira on January 10th of last year, though I had seen none in the low veld. The birds were mostly in pairs, running about over the cultivated ground in search of insects and frequently taking to my Eucalypt shelter-belts, where, on one occasion, I found a pair noisily mobbing a green tree-snake, in company with *Pycnonotus layardi*, *Cinnyris chalybæus*, and other small birds. They left us in March. These Pipits are easily trapped in cultivated ground by means of dead-falls baited with cockchafer-larvæ. Five birds, measured in the flesh, gave an average of 6·69 inches, maximum and minimum 6·8 and 6·5 respectively.

53. Anthus rufulus. Lesser Tawny Pipit.

Rh. Common, usually in pairs, in cultivated ground throughout the high veld of Northern and Southern Melsetter. I found it in Melsetter itself in September, and in the same month near the top of Mount Pene (7000 ft.), where a pair were running about on the newly-sprung sward, and perching continually on the scattered boulders with Wagtail-like movements of the tail. Birds, measured in the flesh, varied from 6·25 to 7 inches. Bill, upper mandible dusky brown, lower ochreous or pinkish white, brown at tip; iris dark brown; feet pale brown, tinged with pink or yellow.

54. MOTACILLA VIDUA. South-African Pied Wagtail.

Rh., P. Not an uncommon species along river-banks, and on open roads or other cleared grounds in the vicinity of water. I have met with it at various points in the Melsetter district, as well as on the lower Inyamadzi and in the Ceara rubber-plantation at Chibabava. A stomach examined contained beetles and larvæ. Length in the flesh (of one individual) 8·12 inches.

I have also noticed a yellow Wagtail, probably either *Motacilla flava* or *M. campestris,* on the upper Buzi, near the Chipinga police-camp.

55. MOTACILLA LONGICAUDA. Grey-backed Wagtail.

P. I watched a pair of these attractive Wagtails for some time at certain rapids on the Kurumadzi on August 7th, and finally shot the male. They would fly up the river with a long graceful flight, uttering all the time a pleasant call, and settle on the rocks in mid-stream, searching there for food and keeping up the usual Wagtail-motion of the tail. I only once saw one settle on a reed. I observed another pair on the Inyamadzi in September, and a third on the Mwangezi at the end of November. My specimen measured 7·85 inches in the flesh. Feet light grey. The stomach contained small insects.

56. PROMEROPS GURNEYI. Natal Long-tailed Sugar-bird.

Rh. Mr. L. C. Meredith, of Melsetter, first informed me that a Sugar-bird was common in the scrub-grown kloofs in that neighbourhood, and on September 24th I secured three specimens. Subsequently I saw a number of others, the flowers of *Faurea speciosa* and of a *Protea* (near *P. abyssinica*) evidently forming the chief attraction. The birds usually utter their loud piping call perched on the top of some tree or bush; it consists of three or four ascending notes ending with the repetition, several times in succession, of the highest, and, though less liquid, reminds one strongly of one of the calls of *Laniarius bertrandi.* Two males, both evidently breeding, measured in the flesh 9·5 and 11·5 respectively, and a female 9·25 inches. In every case the stomach was nearly empty, the total contents of the three barely amounting to the *débris* of half a dozen small flies.

This Sugar-bird was previously known only from the Transvaal, Swaziland, and Natal, this being its first record north of the Limpopo.

57. NECTARINIA FAMOSA. Malachite Sun-bird.

Rh. I noted three males of this handsome Sun-bird in the kloofs at Melsetter during September, and was informed by Mr. Meredith that it was quite common in the neighbourhood. One which I secured measured 10·8 inches in the flesh, and its stomach contained a fly and a small pupa. A female shot near the town on the 23rd of that month measured 6·12 inches in the flesh, and its stomach-contents were a beetle and several small flies.

58. NECTARINIA ARTURI. Arthur's Sun-bird.

Nectarinia arturi Sclater, Bull. B. O. C. xix. p. 30.

Rh., P. I have not yet found this Sun-bird in the Jihu, though it may be met with throughout the higher veld and is particularly plentiful in portions of Northern Melsetter, as at the township itself, the Haroni, &c., and on the hills of the Mafusi portion of the southern district. It is especially fond of frequenting the dense clumps of *Erythrina Humeana* which are scattered over the grass-hills, particularly near Mafusi, and in that portion of the district one may commonly see in October two or three pairs of this bird at a time, usually accompanied by *Cinnyris niassæ,* or sometimes by *C. chalybæus, C. kirki,* or *C. gutturalis,* probing the magnificent scarlet flowers with which these trees blaze forth at that time of year. Another favourite is *Leonotis mollissima,* and, in the portions of the district which these birds most frequent, it is rare to find a really good clump of this plant unattended by at least one pair of *Nectarinia arturi*. In the neighbourhood of Melsetter itself, where I found them particularly numerous in the scrub-grown glens during my visit in September last, they appeared to be specially attracted to the flowers of *Faurea speciosa*, then nearly out of bloom; but this was doubtless not the only attraction, the whole kloofs being ablaze with flowers of various kinds at that time of year. In spite, however, of the fact that its wants are already so liberally supplied by nature, there is no Sun-bird, with the possible exception of *C. niassæ*, which so constantly frequents the homesteads of the settlers as does the present species in the more favoured portions of the district. I may take Wolverhampton, Mr. Gifford's farm near Mafusi, where I spent some days in April, as a good example. Here *Nectarinia arturi*, if not actually the commonest, is at least the most conspicuous and frequently seen bird that haunts the orchards and plantations, and its loud oft-repeated "pea-view" note may be heard all day long in every direction; the banana-walks are never without one or more pairs probing the great flowers for honey and insects, and Mr. Gifford informed me that when a small patch of French beans was in flower it was seldom attended by less than half a dozen of these Sun-birds at a time. *Grevillea Banksii*, an introduced tree, is also a favourite, and I have found the birds frequenting peach-blossom in September. They usually remain in pairs throughout the year, though occasionally I have noticed two males going about together, and sometimes one solitary male. I have frequently seen them holding on by the feet to a vertical twig, preferably when dry or more or less bare, on the top of some prominent object, such as a large orange-tree, a gum-tree, or sometimes the topmost leaf of a banana; thence they will dart off at intervals with a rapid circling flight in pursuit of a passing fly or other insect. They have several notes, of which two, a loud piping repeated call and a short warbling song of no great power, appear to be uttered chiefly in spring. The former I have also heard once in April, when it was uttered by a male in a moment of great excitement. The commonest, however, is a loud pleasant "pea-view! pea-view!" (as it may be rendered in English spelling), which forms the usual call-note and is constantly used by both sexes. I have found altogether five nests of this Sun-bird, from early in September to the end of April, in which month during the present year I found two nests with young birds suspended from the drooping twigs of Mr. Gifford's Eucalypts, twelve and twenty-five feet from the ground. In the veld the vicinity of water appears to be preferred, and the nest is suspended from some leafy twig, to which it is sewn down the back for a more or less considerable portion of its entire length, but no great attempt is made at concealment. The following description of a typical nest, taken near Chirinda on the 4th of November, is from my diary:—"The nest was placed nine feet from the ground, at the head of a vertical shoot of *Mæsa lanceolata* overhanging a stream, an oval in form with the larger end down. The cup was *very* deep, the opening being near the top and protected from rain by a projecting porch" (this varies, being in one case almost lacking) "of fine grass-heads stripped of their seeds and intermixed with downy pappi, usually those of the 'Rukangazi' (*Cryptostegia oblongifolia*). The nest in general is formed of a thick matted felt of these creamy-white pappi embraced by a comparatively scanty outer shell of fine grass-stems and soft dry grass-blades, intermixed with a few fine black fern-roots and three or four dry leaves of *Mæsa* and of *Pterocarpus melliferus*." The glossy brown *ramenta* from the bark of a large tree-fern (*Cyathea Thomsoni*) also occasionally form part of the lining, and I once noted a few feathers as well (in the general material, not the lining), one at least of which, a long tail-feather, belonged to the male bird. Shredded fibres from the bark of some herbaceous plant (probably *Triumfetta*) and scraps of silky cocoons also entered into the construction of one of the nests. "The male became greatly excited at my approach, flying about with a piping 'tiyu! tiyu! tiyu!' The female was less demonstrative, and afterwards, on my going into hiding in order to watch the birds, occupied herself for quite a long time, quietly perched on a branch beside the nest, in carefully preening the whole of her plumage. The nest contained one egg only, white and slightly chalky in texture, with a number of small deep sepia spots scattered over the larger end, chiefly in the form of a zone, and larger and slightly suffused underlying spots and blotches of brownish grey." One, so far as I know at present, is the full clutch. Measurements 20 by 13·5 mm.

On another occasion, at a nest containing one young fledgling, the hen bird was more daring than the cock, visiting the nest boldly as we watched, while her mate flew restlessly about from tree to tree, uttering the usual note. The youngster had a good appetite, opening its bill, orange-yellow within, and shaking it rapidly and excitedly from side to side with a repeated sibillant note. We attempted to feed it ourselves, but, owing to the length of the bill, this was by no means easy, flies, &c., which were taken by the tip failing to find their way to the gullet; the old bird inserts its bill right down that of the nestling.

The male of this Sun-bird differs from that of the nearly allied *Nectarinia kilimensis* not only in its purple and bronze, instead of gold, green, and blue reflexions, but to a slight extent in the form of its skull. In all the greener specimens of *N. kilimensis* in the British Museum the top of the skull is practically on the same plane as the bill, whereas in *N. arturi* there is a distinct rise from the base of the culmen, rendering that point appreciably easier to locate. This hollow also occurs to some extent in such skins from Uganda and Nyasaland as are intermediate in their colouring, of which the actual type of *N. kilimensis* is one. In length of culmen, wing, and tarsus the two forms are very near one another, though, judging from the six specimens of *N. arturi* with complete tails in my collection, in this respect the Gazaland species seems to fall short of the other, averaging

4·54 inches, with a variation of 4·35 to 5·35; of thirteen skins of *N. kilimensis,* five males measured in the flesh averaged 8·65 inches, ranging from 8·3 to 9.

The breeding female resembles that of the northern form, but the yellow of the under surface appears to be duller and more ochreous. Length in the flesh 6·2 inches.

A nestling from Mr. Gifford, just able to fly, and one of my own, not quite full-fledged, are strongly tinged with olive throughout the upper surface and chest; the abdomen, particularly in the latter, is of a brighter yellow, and more nearly gamboge than in the female. The throat is mottled grey and whitish with a slight tinge of yellow on the sides, and the eyebrow of the female is represented only by a small yellowish streak. The outer tail-feathers are margined externally with white. Culmen 1·02 and 0·8; wing 2·3 and 1·95; tail 1·35 and 0·7; tarsus 0·63 and 0·6 inches. The bills of the nestlings were brownish grey, their feet leaden grey, and irides brown.

59. CINNYRIS MICRORHYNCHUS. Short-billed Sun-bird.

Cinnyris microrhynchus Shelley, B. Afr. ii. p. 55.

P. In the low veld of Gazaland this little Sun-bird appears to take the place occupied by *C. niassæ* in the mountains. At Chibabava I found it common in pairs, in December and January, both in the open woods and amongst the rubber-trees in the plantation; and I was informed that its range extends quite to the coast, though I do not appear to have noted it myself far to the east of Chibabava. A male which I measured was 4·65 inches in the flesh, and of three stomachs examined two contained portions of small flies, the third *nil.*

60. CINNYRIS LEUCOGASTER. South-African White-breasted Sun-bird.

P. I noted one of these Sun-birds at Bimba's, between Chibabava and Arucate, on the 7th of December. It was feeding in company with a pair of *C. microrhynchus.*

61. CINNYRIS VENUSTUS NIASSÆ. Nyasan Sun-bird.

Cinnyris venustus niassæ Reichenow, Vög. Afr. iii. p. 474.

Rh., P. Our commonest high-veld Sun-bird excepting in the Jihu, where, though still plentiful enough, it yields first place to *C. kirki*. I have not found it in the lowlands, and believe its range to be bounded to the east by the Sitatonga Hills and Chimanimani Mountains, and by Mount Singuno, or, at most, the Umswirizwi, to the south. Actual localities where noted are Northern and Southern Melsetter, throughout; the Kurumadzi, Zona and Chinyika Rivers in the Jihu; Maruma, Wolverhampton and the Chikamboge Valley in Mafusi's; and the lower Inyamadzi Valley: say from 2000 to 6500 feet. There seems to be a probability that very slight local migrations of these birds occasionally take place, as Stanley wrote to me early in July stating that the Sun-birds in his neighbourhood had completely disappeared. I have never noted such an occurrence myself.

This Sun-bird breeds with us throughout the year. I have found a nest containing young birds early in July by a stream where frosts were of nightly occurrence, and during August have noticed recently fledged broods going about with their parents. The nest is of the usual Sun-bird type, narrower at the top than below, and slung from an upright stem or drooping twig, or placed in the centre of a thorn-hedge a few feet from the ground. That in my collection is composed entirely of grass-blades, both broad and narrow, and fine heads and stems of grass, the latter, stripped of their seeds, being brought forward together over the entrance to form a brush-like porch. Dry leaves and vegetable down are woven into the general structure, and the interior, including the porch, in scantily lined with the latter. The threshold is neatly covered with spiders' webs, which, however, are not much in evidence elsewhere in the construction. The total depth, externally, is 5·1 inches, the depth from the opening downwards 2·5 inches, front to back 2 inches, diameter of entrance 1·3 inch. Both birds become much excited when a nest is approached, uttering a continually-repeated "Tshwee, tshwee, tshwee, &c." However, as is so often the case, the female shews greater boldness than the male, and in the case of the nest I have just mentioned as containing young, ended by visiting them repeatedly in my presence, her mate continuing to fly anxiously backwards and forwards.

Cinnyris niassæ is evidently not particular as to its feeding-ground, for I have noticed it in every kind of country to be found within the area defined above: at Melsetter it not only frequents the sheltered glens, but may be found on the exposed hill-sides up to at least 6500 feet amongst the wind-stunted Brachystegias and Myricas of the locality; during the spring, at all events, the blossoms of the first must supply the birds with sufficient insect-food, while at other seasons they doubtless fall back on the Proteas. Five males, measured in the flesh, averaged 4·55 inches, ranging from 4·34 to 4·8 inches, and the same number of females averaged 4 inches.

This species was met with by Alexander on the Zambesi, the southernmost locality previously known.

62. CINNYRIS CHALYBÆUS. Lesser Double-collared Sun-bird.

Rh., P. This Sun-bird has been unusually plentiful, in pairs, in the neighbourhood of Chirinda throughout the past year, especially at Cannas, peach-blossoms, and the flowers of *Grevillea Banksii*. Two fine bushes of the latter at Dr. Thompson's house near Chirinda are never without several of these Sun-birds, in company, usually, with *C. niassæ* and *Anthothreptes collaris*. I found them common in the kloofs at Melsetter in September, and on the upper Lusitu in the same month. They also occur in the Mafusi district. During March, when my rubber-trees (*Manihot Glaziovii*) were in full bloom, several of these birds frequented the plantation daily, and on the 22nd of that month Odendaal shot a male there the stomach of which I found to be greatly distended by a ball of elastic brown rubber. Evidently, in attempting to extract the honey from the *Manihot*-flowers, the bird had been unable to avoid pricking the flat discs, and had consequently swallowed a considerable amount of latex. It could not have lived much longer in the state in which I found it.

Two eggs in my collection measure 16·5 by 12 mm. each, and are pale grey in ground-colour, finely and uniformly mottled with a slightly darker shade of brownish grey. Eight males, measured in the flesh, give an average of 5·25, with a range of from 5·1 to 5·45 inches. A larva, small beetles and flies, and other insect-remains composed the contents of the nine stomachs examined.

The bird referred to in my last paper as *Cinnyris afer* ('Ibis,' 1907, p. 42) appears actually to be intermediate between *C. afer* and *C. chalybæus.* Culmen 1 inch; wing 2·4; tail 1·8; tarsus 0·64; red breast-band 0·52. Length in the flesh 5·5 inches. A similar male, recently obtained by Odendaal near Chirinda, also measured 5·5 inches in the flesh; culmen 1·1; wing 2·5; other measurements as above.

63. CINNYRIS GUTTURALIS. Scarlet-breasted Sun-bird.

Rh., P. I came across this handsome species on the Kurumadzi several times during the first half of August last year, and have also noted it occasionally in the upper Jihu. In Southern Melsetter, though not one of our commoner species, it is fairly generally distributed, and not infrequently, during the past year, visited the "silky oaks" (*Grevillea Banksii*) which have been planted near Chirinda. Since my return to England, Odendaal has sent me several specimens, including males in immature plumage, which he obtained in that locality during May. In Mafusi's country I have noticed it in the Chikamboge Valley as well as on the surrounding hills, where I found it breeding at 4000 feet in September last, the nest being conspicuously placed in the branches of a rubber-tree. At least one pair, or sometimes more, of these Sun-birds are always to be seen in the banana- and rubber-trees at Maruma, where they are fond of hanging completely upside down like Tits, often both together, their feet grasping the bases of the flowers while they systematically probe the long tubes, one after the other, for insects and honey. The male's note is a loud "Tsiyi-tsiyi-tsiyi-tsiyi-tsi," or, occasionally, a more liquid "Tyu-tyu-tyu, &c." On two occasions I noted a pair of these birds at Chibabava, in the low veld, during December and January last. Three males in immature plumage average 5·76 inches, and a breeding male measured 6·1 inches in the flesh. The stomach-contents were small beetles, flies, and a larva.

64. CINNYRIS KIRKI. Kirk's Sun-bird.

Rh., P. On my visits to the Jihu during the past year I found this to be by far the commonest Sun-bird in the dense grass-jungle of the lower elevations (2000 ft.). I have also frequently noticed it in the upper Jihu and the Chikamboge Valley, but in the yet higher portions of the district it can hardly be described as one of our commonest Sun-birds, though I have come across it not infrequently at the flowers of the Proteas and Grevilleas.

I have found only two nests of this Sun-bird; they were far more neatly and compactly built than those of either *C. gutturalis* or *C. chalybæus*, and differed from all that I have found of those two species in the fact that they were in each case completely suspended from a drooping twig and without any side support whatsoever. One of them was very cleverly concealed behind the leaves of its supporting twig, while the other, strange to say, was within five yards of a tree containing an occupied nest of *Aquila wahlbergi*. Each nest was about ten feet from the ground, and was composed almost entirely of soft dry grass-blades, more or less fine and cleverly interwoven, intermixed with vegetable down; the latter material, with the addition, in one case, of one or two feathers, also formed the lining. The roof was built internally to a large extent of very fine grass-stems, which acted as a support to the dome, while the outside of the nest was ornamented with large quantities of lichen and a few small pieces of bark and wood, as well as one or two fine twigs. The whole was neatly braced together with spiders' webs, which, however, were not nearly so much in evidence as in the nests of *C. chalybæus.* The clutch consists of three eggs, varying from 17 to 18 mm. in length, and from 12 to 12·5 in breadth. They are very pale greyish brown or greenish grey in ground-colour, in one clutch mottled, in the other clouded streakily and longitudinally with a slightly darker shade of olive ; this colour in each case almost completely hides the ground-colour (as in the eggs of the Sedge-Warbler), and in the former is particularly noticeable as a faint zone round the large end. The parent birds in both instances flew straight away from the nest and did not reappear, in this again differing from the two preceding species, which usually shew not a little excitement.

Nine of these birds gave an average in the flesh of 5·22 inches, with a range of from 5 to 5·5 inches.

65. CINNYRIS OLIVACEUS. Olive-coloured Sun-bird.

Rh., P. With us this is almost a purely forest-species, for though we may find it feeding on *Leonotis* along the outskirts of dense bush or forest-patches, and though it has taken to following my thorn-hedges and visits my banana and Eucalypt plantations, I have never found it at any great distance from thick bush, inside which, and especially in Chirinda and Chipete, it is often exceedingly plentiful. I have only twice noticed it in the Jihu, each time at the flowers of *Leonotis mollissima* near the denser bush of the Kurumadzi (this was early in last August), and I have also noted it in the Chikamboge Valley. It is an active little bird, seldom still for an instant, and easily distinguishable from the female of any other species, if only by its sharp constantly-uttered "cip-cip!" (Zulu "c" *), which is also uttered in flight. It is most tuneful, and on entering Chipete on any fine evening after sunset, particularly during the breeding-season (though I find that it does continue to sing throughout the year), I often enjoy a delightful chorus of its loud warbling songs, proceeding from the higher branches in every direction.

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* "c" and "q" throughout these notes, whether in native names or in the calls of birds, represent peculiar Zulu click-sounds, the former soft, the latter sharp like the crack of a whip.

In the morning, whilst feeding, its song is more intermittent, a few notes only being uttered at a time; then with a "cip-cip-cip" it will take a flight after an insect or to another twig, then come a few more notes and another flight, and so on. In the spring I have sometimes heard the male employ a loud frequently-repeated piping note as he chases the female in and out of the higher branches. As a general rule the bird may be found in the greatest numbers amongst the undergrowth of saplings and shrubs; of these, *Achyrospermum Carvalhi* and *Macrorungia pubinervis*, both with brilliant scarlet flowers, are particularly attractive to it. In feeding at these flowers or at those of the *Leonotis* it grasps the stem below the flower-head, and, without moving its feet, darts its bill rapidly into each flower in succession until it gets about halfway round, when it shifts its feet and does the other half; while thus engaged it frequently utters a quiet "chürr," but if an intruder comes suddenly or roughly into sight it flies off a few yards with its usual "cip-cip" note, though its full term of abuse is a loud "Chürrr-chüwe-chüwe-chüwe-chüwe-chü-chü-chü!" (French "u" throughout).

I have already described the nesting-habits of this bird, but as I have this season examined between twenty and thirty more of its nests, most of them containing eggs, it may be well to add a few further details. The egg practically does not vary at all: in only two cases have I found anything but the pale bluish or greyish-white ground-colour and sepia and grey markings already described; in these two clutches the ground-colour was white and the markings consisted of fairly numerous short streaks and spots of light grey only. In the more ordinary type the sepia markings are sometimes so dark as to be to all intents and purposes black. I have never found an egg approaching the type of coloration described by Layard and quoted by Captain Shelley ('Birds of Africa,' vol. ii. p. 124). The nest varies more. It always hangs loose from some drooping twig, usually in Chirinda that of *Sclerochiton Harveyanum*, a shrub with small leaves which in some parts forms the main undergrowth. It is placed sometimes as little as eighteen inches from the ground, and I have so far found only one placed as high as six feet. This particular nest was further notable for the fact that it had been successfully and fairly firmly attached to the drooping end of a long slippery *Dracæna*-leaf, and that its "tail," instead of proceeding as usual from below the opening, was attached to one side of the nest and thence thrown loosely over another leaf, thus taking some of the weight of the nest off its somewhat insecure attachment and pointing to considerable intelligence and adaptability on the part of the bird. This tail, when present, may be composed of grass-blades, twigs, roots, moss, leaves, strips of bark, or two or more of these materials combined, and varies a good deal in length, bulk, and construction, as do also the strips of material (usually but not always long, and composed as a rule of moss) which attach the nest to the twig. The materials employed for the fabric in general include small twigs and grasses, lichen, moss, leaves (usually of a smilax, *Behnia reticulata*), dry stems of "false maiden-hair" (*Thalictrum rhynchocarpum*), and other herbaceous plants and down. Occasionally this down, consisting in Chirinda nearly always of the pappi of a fine latex-yielding liana, *Oncinotis chirindica* (Moore), is the chief material employed, being then merely braced externally with a thin network of some of the other materials mentioned, but sometimes moss (especially a luxuriant *Madotheca* common on tree-trunks) is the main material used, and at other times dry leaves, which are in any case very generally employed to support the cup. The *Behnia*-leaves and this lining of down almost invariably characterize such nests of the bird as are found in Chirinda and Chipete, the other materials varying a good deal; cobwebs are used, but not to a great extent. The nest proper from dome to bottom of cup (measured externally) hardly exceeds 3·6 or 4 inches in depth, but the attachment may sometimes measure 7 and the tail 10 inches or a foot. The female will occasionally sit very steadfastly, but as a general rule I find that she slips quietly down into the undergrowth on my near approach and returns equally stealthily in from five to ten minutes. Meantime, however, the male may usually be heard and, when bold, seen, flying about in the branches all round with a loud but anxious "cip-cip-cip."

Fifteen of these Sun-birds measured in the flesh gave an average of 5·64 inches, with a maximum of 6·2.

66. ANTHOTHREPTES COLLARIS HYPODILUS. Zambesi Collared Sun-bird.

Rh., P. Though less plentiful than *Cinnyris niassæ* at Mafusi and near Chirinda, and than *C. kirki* in the lower Jihu, this is in both cases one of the commonest Sun-birds of the locality, and I found it fairly frequently in the neighbourhood of Chibabava (400 ft.) in December and January. At Chirinda it has been more or less plentiful right through the past year, usually following the trees along the outskirts in pairs and small parties and searching the foliage carefully for insects, or frequenting any tree or climber with attractive flowers which happened to be in bloom either in or just outside the forest. Some of its favourites were, I noted, *Achyrospermum Carvalhi*, *Helinus Mystacinus*, a large climbing *Gouania*, *Macrorungia pubinervis*, and the long brown flowers of *Halleria lucida*, which I frequently saw it probing with its bill during August in company with *Cinnyris olivaceus*. It is readily snared on the *Leonotis*-blooms. It has a very loud and ventriloquial call, "Tsiwu! Tsiwu!" with which individuals 80 or 100 yards apart may sometimes be heard replying to one another. On April 10th I watched an immature bird, one of a family-party perched on the top of a *Carissa* hedge, behaving somewhat curiously, bowing and curtseying with a rattling noise of the wings such as this species frequently makes in taking short flights.

A nest which I took on the Kurumadzi on the 20th of November was slung from the twig of a custard-apple (*Anona senegalensis*) in the grass-jungle, three feet from the ground, a very large leaf of the plant entirely shading the porch and acting, doubtless designedly, as an effective protection against rain. A few leafy stems of a common climbing fern (*Lygodium subalatum*) completed the concealment of the nest, which was composed externally of dry grasses, a few small strips of bark, and the dry leaves of the climbing fern, the first material predominating; finer grasses surrounded the entrance and formed a ceiling for the porch, which was fairly large. A few rough, dirty pieces of lichen were affixed externally, especially to the bottom of the nest, the cup being lined with vegetable down (the pappi probably of the "Rukangazi," *Cryptostegia oblongifolia*) and fine grasses. Total depth (exclusive of hanging pieces of grass, &c.) 5·1 inches; front to back 2·85 (external); side to side 2·1; diameter of opening (which is round) 1·35; depth of cup (inside) 2. There were two eggs, nearly fresh, white in ground-colour, the larger end surrounded by a complete finely-speckled zone of pale grey, a few of these fine spots straying to other parts of the egg; intermixed were slightly larger spots and small streaks of dark sepia-brown (almost blackish), many of them slightly suffused. They measured 0·65 inch and 0·63 by 0·45.

A second nest containing one young bird was built entirely of bleached grass-blades lined with downy pappi, and was slung from the side twig of a shrubby young "Chinanga" (*Zizyphus mucronata*) in the long grass; the porch lacked the sheltering leaf and was wider and more overlapping than in that previously taken, but at the same time clumsier. In both cases the female was very shy about returning, and at neither nest did the male bird put in an appearance at all.

Thirteen of these birds (male and female, there is little or no difference between the sexes in size) averaged in the flesh 4·2 inches, with a minimum of 4·1 and a maximum of 4·6 (an exceptionally large bird). Thirteen stomachs have been examined and contained ants, flies, small beetles, larvæ (in five cases), a small snail, and two spiders.

67. ZOSTEROPS ANDERSSONI. Andersson's White-eye.

Rh., P. On the Kurumadzi during the first half of August this White-eye was quite the commonest bird, being more numerous even than *Pycnonotus layardi* and the two common Seed-eaters. They (the White-eyes) were going about everywhere in the tall grass-jungle in flocks numbering as many as forty individuals, diligently searching the *Leonotis*-clumps for food, and, when temporarily tired of insect-hunting, chasing each other about amongst the branches of the trees. Their note, frequently uttered, was a mournful swallow-like "Chiw!" They were very tame and I several times watched one draw two or three larvæ in succession from the *Leonotis*-bracts, generally perching below and probing all round with its bill. In November in the same locality I saw very few of these birds; much of the grass had been burnt, and the *Leonotis*-clumps were no longer attractive. I have never seen such large flocks in the higher country, where, however, parties of a dozen individuals are common enough. I have also shot this species in the Chikamboge Valley.

Bill black, base of gonys bluish white; irides light brown, tinged with either yellow or grey; feet blue-grey, but variable, usually light or even quite pale, but occasionally dark. Eight birds were measured, averaging in the flesh 4·35 inches each, maximum 4·6.

68. Parus cinerascens parvirostris. Northern Grey Tit.

Parus parvirostris Shelley, B. Afr. ii. p. 243.

Rh. On September 27th, when camping on the Haroni River, I shot one of a pair of these birds which were flying from one *Brachystegia* to another and searching for insects in the tender red foliage. It measured 5·4 inches in the flesh.

69. Parus niger. Black Tit.

Rh., P. The only places at which I noticed this Tit in the low veld were on the Lower Umswirizwi (1000 ft.) in November, and in the *Brachystegia*-woods bordering the Madanda forests, near Arucate, at perhaps 400 feet, where I shot the female of a pair which were calling to one another with a harsh note. The stomach contained a beetle and the remains of fruit. Three birds measured gave an average of 6·34 inches in the flesh.

70. Lanius humeralis. Northern Fiscal Shrike.

Chindao: "Mutungadzorera" (or "-dzaora"), meaning "impaler of 'gamey' food." "Laksman" of local Dutch.

Rh., P. With us this Butcher-bird is by no means abundant, but it is widely distributed and may be seen occasionally perched on the top of some commanding shrub or tree, jerking its long tail and uttering its harsh "Twee-twee!" I have noted it most frequently in the neighbourhood of Chirinda, in the Chikamboge Valley and at Maruma, where the young orange-trees are a favourite perch. When they were in flower last September, a "Laksman" might be seen perched on them daily, with its head and body tilted forward and its long tail projecting horizontally, gaining an easy livelihood from the swarms of hymenoptera and other insects which were attracted by the sweet-scented blossoms, while doubtless it found the thorns of the orange-trees useful as hooks.

I find a few nests of this species every season; it prefers isolated trees in more or less open grass-country, and builds a large, strong, but somewhat handsome nest, usually more or less concealed by foliage, of the stems and leaves of the common "everlasting" (*Helichrysum nitens*), mixed with a little bracken or grass and braced with fine, tough twigs or roots; the lining consists of fine roots, flower-pedicels, or grasses, and is usually neat and fairly abundant. In the neighbourhood of Chirinda, at all events, the external nest is, as a general rule, almost entirely constructed of the first named material, the stems of the "everlasting," with their yellow flowers and white downy leaves still attached, being either wound together as they are or formed into an extremely tough white felt. The nest varies somewhat in size with the method of construction adopted, two specimens in my collection measuring respectively in external diameter 3·6 (a felt nest) and 5 inches, and in depth 3 and 4·5 inches. The internal measurements vary less, the cups being roughly 3 inches in diameter by from 1·75 to 2 inches in depth. There are two common types of egg—one bluish, greenish, or greyish-white, with numerous spots and small blotches of light olive-brown and grey; the other far duller, and finely speckled all over with very pale dull grey and brown spots on a creamy ground: in both these types the markings frequently form a zone round the larger end, but occasionally round the smaller. They measure from 24 to 26 mm. in length, by 18 to 20 in breadth. Three eggs are laid, and the sitting bird, at other times so bold, will slink quietly from the nest at the very slightest alarm, seldom returning till after a considerable interval. An adult female measured 9·1 inches in the flesh, and two birds in immature plumage 7·8 and 7·25. The stomachs contained beetles.

71. LANIUS SUBCORONATUS. Coronetted Shrike.

Rh. I have only secured one specimen of this Shrike, which I cannot but think is merely an occasional variety of *L. humeralis*. The nest and eggs, which I took on October 30th, exactly resembled those of *L. humeralis*, the former being built of everlastings, &c., not felted, and the eggs being three in number and of the closely-freckled type.

72. LANIUS COLLURIO. Red-backed Shrike.

Rh., P. During my recent trip to the coast, from November to January, I found the Red-backed Shrike to be one of the commonest birds throughout the low veld. It was particularly plentiful at Arucate and between Chibabava and that place, and right from Chimbuya, through the Umtefu River, Chibabava, and Muchukwana's to Chironda, being usually met with at frequent intervals, sitting alone on the tops of bushes or small trees on the watch for passing insects. Between the two last-named places nearly all the individuals that I saw were males in full plumage, though previously, and particularly from Chimbuya's to the Umtefu, I had seen little else than females or young birds. I have not noticed this Shrike near Chirinda later than April 2nd.

Eight specimens averaged 7·11 inches, varying from 6·65 to 7·5.

73. NILAUS BRUBRU. Brubru Shrike.

Rh. I noticed one of these birds, the only "Brubru" I have yet seen in Gazaland, on the 29th of July in an open wood on the western slope of Chirinda. I found its nest nine years ago in Mashonaland, on October 20th, containing young birds. It was placed about fifteen feet from the ground in the fork of a *Brachystegia*, and so small was it, and so well assimilated to the surrounding bark, that except when the old bird was sitting it was perfectly invisible. It was composed entirely of a curious pale green-grey cement or felt intermixed only with a couple of *Brachystegia*-leaves and lined scantily with two or three fine grasses. The male, which I afterwards shot, was on the nest when I first found it ; its stomach contained beetles and a grasshopper.

74. TELEPHONUS SENEGALUS. Black-headed Bush-Shrike.

Singuni : "Umqubana" (Zulu "q"). The Mashona name is "Samora."

Rh., P. As common in the low veld proper as it is in the high, but I have not yet found it in the lower Jihu, where it appears to be replaced by *T. australis* and *T. anchietæ*. From the beginning of November to the middle of January I frequently came across it in travelling from the Mwangezi River to the coast, localities specially mentioned in my notes being the Mwangezi itself, the Umtefu, Inyajena, Chibabava, the Idunda River, Inyamita, and Gwaragwara. In the Mafusi country, as well as through Northern and Southern Melsetter, it is common enough, and I have noted it on the lower Inyamadzi and middle Buzi (above its junction with the Umswirizwi). I have already described the nest of this bird ('Ibis,' 1907, p. 46), and have now only to add that grass-blades, bark-fibre, and twigs are occasionally used in its construction as well as roots. The streaky markings on the eggs were in one clutch quite short and confined to the larger ends of the eggs and were deep purple-brown in colour ; in another they were pale purplish brown-madder, and I have also taken clutches in which only the paler grey markings were present. The sitting bird leaves the nest easily, usually returning in about ten minutes. On one occasion as I was watching, both birds returned and perched on a branch a few feet above my head, and a long consultation of short, low, harsh notes ensued before the hen would again venture near the nest. If the surrounding ground is fairly bare (as in many parts of Mashonaland, rarely with us), the bird will nearly always drop from the nest on being disturbed and run a few yards before rising. In October of 1898 I continued to shoot the bird every time I saw it leave the nest, with a view to ascertaining how often it would take to itself a new mate. The first to be shot was a female, the next a male, and the third again a female, after which the eggs were removed, probably by the bird itself.

Feet invariably light blue-grey; iris grey, often rather deep and with a dash of cobalt, while the pupil is occasionally surrounded by a narrow ring of chestnut. In the nestling the bill is grey-brown, and irides and feet pale grey. Six of these Shrikes averaged in the flesh 8·97 inches, and locusts, beetles, a wasp, spiders, a large cricket, and larvæ were amongst the contents of their stomachs.

Two young birds, nearly fledged, from the same nest, resembled the adult in general coloration, but the crown and eye-stripe were duller, merely blackish-brown; eyebrow uniform pale buff throughout; lores occupied by a bare patch of grey skin and a similar patch just behind the eye; back and rump vandyk-brown, a far colder shade than in the old bird; two centre tail-feathers barred as in the adult, others white with black bases; wings as in adult, but whole of under-surface more strongly tinged with buff, the grey shade of the chest appearing as faint dusky bars. Culmen 0·67 and 0·6; wing 2·57 and 2·3; tail 1·27 and 0·9 inches.

75. TELEPHONUS AUSTRALIS. Three-streaked Bush-Shrike.

Singuni: "Umqubana."

P. During my stay on the Kurumadzi in August, I found this to be the common *Telephonus* of the neighbourhood. It might sometimes be seen perched or moving about quietly in the bush or feeding on the ground along the edges of Kafir clearings, and was very shy, flying low and at once taking refuge in the dense bush or nearest rank herbage.

My three specimens measured from 7 to 7·25 inches in the flesh; bill light ashy-grey, feet light blue-grey, irides brown-madder. The three stomachs examined contained grasshoppers, large and small, a whole mantis egg-case, two larvæ, beetles, and other insect débris.

76. TELEPHONUS ANCHIETÆ. Anchieta's Bush-Shrike.

Telephonus anchietæ, Gad. Cat. B. viii. p. 129.

Rh., P. A bolder bird than either *T. senegalus* or *T. australis*, choosing the tops of stakes and shrubs to perch on instead of skulking, as they do, in the undergrowth, and recognisable at once and at a distance by its conspicuous buffy-white breast and upright carriage.

I have twice secured specimens in the lower Jihu, the second time on the 11th August, the bird, which was in immature plumage, perching on a tall grass-stem a few yards from the Kurumadzi. And on the 7th November I shot a third at 3500 feet in a gully at the foot of Chirinda, the stomach of which contained grasshoppers and beetles. Bill black; feet light slaty-grey; irides pale brown-madder. In the immature bird the bill was dusky with a paler gonys and the feet leaden grey, and it measured 7·5 inches in the flesh as against the 7·19 and 7·7 of my other two specimens. In plumage it differed in the feathers of the crown being wholly or partly pale buff, giving a pale centre and a generally blotchy appearance to the cap; eyebrow buffy white and inconspicuous; lower parts rather more strongly tinged with buff than in the adult. The stomachs contained grasshoppers, beetles, and dragon-flies.

77. DRYOSCOPUS CUBLA. Lesser Puff-back Shrike.

Rh., P. Extremely plentiful on the Kurumadzi, particularly in the thick bush, in which, not only in the Jihu but in the neighbourhood of Chirinda, it never goes about in the flocks which I have noted in the open woods of the higher elevations, but is always to be met with singly or in pairs and is also somewhat shyer than when in larger parties. It is a most diligent insect-hunter, and I have frequently watched it carefully and systematically examining the upper foliage in thick bush, calling occasionally while thus engaged and being answered, often at some distance, by its mate with a low, somewhat harsh, repeated note "Che-che-che-che-che, &c." (light German "ch"). Its commonest note, however, is a loud click, followed by a clear whistle; the latter was well rendered by Marshall in his paper on Mashonaland birds, but the former has usually, in winter I think always, a decided roll in it, and the whole might be rendered most nearly as "Trrk-whiw!" In the spring the birds seem to acquire an extended range of song, a fairly common note from October onwards being a loud, harsh "Chikerrr! Chikerrr!" or a tearing note somewhat like that of *D. guttatus*. The male, too, at this time of year, will frequently stop in its search for insects and sing, with outstretched neck and head on one side, "Trr-trr-trr-trr-trr-Trrk-who-wheeoo! Trrk-who-wheeoo! Trrk-who-wheeoo!" a "Whip-poor-will" sort of note rather longer drawn than the commoner "Trrk-whiw!" I once, in the winter, noted a pair calling to one another with a peculiar "chip-chip-chúruru!"

This bird has a loud crackling flight and a peculiar display; it will sometimes fly with this crackling sound for some distance (perhaps halfway in crossing an open space between trees) and then, holding its head well up and bringing its outstretched wings well down at each note, utter in flight the rapidly repeated "twhiw, twhiw, twhiw" (with little "click" and no roll), which in the summer often takes the place of the commoner and less modified note. It is common in the Inyamadzi Valley in the more luxuriant growth bordering the river, and in the Chikamboge Valley. In the low veld I found it particularly plentiful between Inyamita and Malata, as well as at Chibabava and in the Madanda forests; other low veld localities noted were the Mwangezi River, Chimbuya, the Umtefu, Gezanye, Arucate, Muchukwana, Idunda River, Inyandhlovu, and Gwaragwara.

Five of my specimens averaged 6·81 inches in the flesh, with a variation of from 6·35 to 7·1 inches.

78. DRYOSCOPUS GUTTATUS (Hartl.). Hartlaub's Shrike.
DRYOSCOPUS MOSAMBICUS (Finsch & Reichw.). Mozambique Shrike.

Singuni: "Icivana" (Zulu "c").

Rh., P. Both these forms occur commonly here, and the difference in their plumage is probably largely a matter of age and sex. That they are one and the same species, I have very little doubt, as I found them breeding together on the Kurumadzi on November 22nd. The nest contained one young bird with only two white-edged secondaries in each wing. I waited and shot both parents: the male, like the young bird, had only two white-edged secondaries; the female three white-edged secondaries in each wing and a whitish breast. An examination of the sixteen skins in my collection confirms this view.

This Bush-Shrike is particularly plentiful in grass-jungle country (as at Mafusi's, where I specially noted it as common at Maruma and in the Chikamboge Valley, also on the Inyamadzi) and especially so throughout the lower Jihu, where one constantly hears its calls or catches glimpses of it in the long grass, in spite of its skulking habits. In the low veld I have seen it only on the Umtefu River. An individual with a dark breast daily frequented the clearing round my camp on the Kurumadzi, and, as I would not permit it to be molested, it became exceedingly tame after a few days, hopping in and out amongst my grass shelters and sometimes right up to the door of my tent, with its head first on one side, then on the other, or occasionally erected to utter a harsh note, not unlike the tearing of cloth; it appeared to obtain a plentiful supply of food from the newly cleared ground. I found several nests of these birds in the same locality during November; these were placed at from four to seven feet from the ground (mostly recently-burnt jungle) and without any attempt at concealment, in such places as the centre of a burnt bare tangle of *Rhoicissus zanzibarensis*, on supporting twigs against the bark of a large *Pterocarpus* or *Acacia*, in the fork of a small tree, &c., and in general appearance much resembled those of *Telephonus senegalus*.

They were constructed externally chiefly of roots, but these were usually intermixed with a few dry herb-stems, particularly those of *Mucuna coriacea,* while in one or two cases a little grass, the tendrils and leaves of the above-mentioned *Rhoicissus,* or a strip of bark were worked in; they were lined entirely with reddish-brown roots, compactly arranged, or the midribs of some pinnate leaf. External diameter of nest 4 to 5·1 inches; depth from 1·85 to 2·5. Diameter of cup about 3 inches and depth 0·8 to 1·4 inches. The eggs were always two in number, pale greenish-blue, or white very faintly tinged with greenish-blue in ground-colour, with numerous spots and blotches, sometimes longitudinal, of violet-grey, brown-madder, and deep chestnut-brown, the markings usually larger and most numerous about the larger end, where they sometimes form a zone and at others tend to stray over the pole and form a cap; the variation is so considerable that, of the two extreme types in my collection, one resembles the English Moorhen's egg in its scheme of coloration, while the other approaches that of *Laniarius quadricolor.* They measured from 23 to 25 mm. long by from 17 mm. to 17·8 broad.

The behaviour of the birds at the nest is most interesting, and may be best illustrated by one or two quotations from my diary:—"On waiting for the birds to return I was treated to quite a pretty performance. After ten minutes' wait the female appeared at some distance to my right and was followed shortly after by the male, who took up his position in some thick scrub immediately below her. She, however, was in full view, and commenced the duet: 'kéa-kéa-kéa' (*anglicè* 'care'), notes like the tearing of cloth and with a low bow at the end. These three notes she would repeat three or four times and then come out with a loud 'Quare!' to which the male replied 'Woh!' (the 'Quare' longer-drawn and bolder than the preceding 'Care,' and the male's 'Woh' hollow and resonant, like the loud musical croak of certain frogs). I could not observe the actions of the male well, as he was more or less hidden by the scrub, but the third 'Care' and every 'Quare' of the female was accompanied by a bow. This went on for two or three minutes, when she flew towards the nest, followed in a few seconds by the male. At this moment my terrier frightened them, but I banished him and again waited, hearing several times the male's note repeated three times in succession 'Wo, wo, woh!' when I might even then have mistaken it for a frog's, had not the female sometimes joined in and renewed the duet for a few seconds. Finally, she flew to the nest and had just said 'Quare' when I shot her to ascertain her sex, the male, still at a distance, answering 'woh' after the shot." The calls vary somewhat in their arrangement, and when the two notes are run into each other, as they sometimes are, without an interval, and kept up for some time, one might easily mistake them for a true frog-duet. At another nest: "The birds were bolder than usual, though in any case they are not so shy at the nest as at other times, the female especially remaining in sight while moving about in the higher branches of the trees some distance away, though the male, as usual, skulked to some extent. Their performance differed from that of the other day, the male calling twice to the female's once. Male: 'Woh!' Female: 'Quare!' Male: 'Woh!' The first 'Woh!' is rather long-drawn and the second is shorter and sharper and breaks in in the middle of the female's 'Quare!' The birds kept this up steadily for quite a long time, bowing at *every* note, recommencing again immediately should they be interrupted by a flight and keeping time perfectly, however far apart. When, once or twice, the female called without waiting for the male, he promptly brought in the second *sharp* 'Woh!' only, in its proper place. The alarm-note is a short repeated 'Tchk! Tchk!' and was in this case uttered by the female when I shot the male, and was continued by her for some time interspersed with numerous 'Quares!' as she searched for him. A second female had just previously joined in the song at a little distance off, and now, after the male's death, continued to make answer (always with the same 'Quare') to the survivor's call."

I have to add to my previous list of the food of this Bush-Shrike snails (in three cases), a Noctua, large ants, and, in one, *Physalis*-like seeds, but in nearly every one out of the fourteen stomachs examined the *pièce de résistance* had been beetles.

Thirteen of these birds, measured in the flesh, averaged 8·38 inches and shewed a considerable variation, ranging from 7·8 to 9·25. A nestling, nearly ready to fly, measured only 4·8 inches.

79. LANIARIUS QUADRICOLOR. Four-coloured Bush-Shrike.

Singuni: "Ighiya-ngehlangu."

Rh., P. I have noted this fine Bush-Shrike in the lower portions of Chirinda, and frequently in Chipete and other forest-patches of the high veld, as well as in the Inyamadzi and Chikamboge valleys and at Maruma. In the lower Jihu it is really plentiful, particularly in the denser bush, though heard far more frequently than seen, and it is common in the Madanda forests; I have also heard it in the low veld in two or three places between Muchukwana and Chironda, including the dense bush at Chironda itself. I have twice watched one of these birds calling on a horizontal branch a few feet from the ground. It kept well down on its breast with feet wide apart moving sideways occasionally along the branch, bobbing its head up and down and frequently uttering its loud melodious call: "Pom! puwe, puwe!" It is probably this dancing movement which, with the bird's boastful coloration and bold call, has caused the natives to give it the name of "Ighiya-ngehlangu," the expression having reference to the custom whereby at the great war-dances a warrior will rush out of the ranks and repeat his exploits, both by narrative and action, before the Chief, his comrades meanwhile dancing and beating time upon their shields (*ihlangu*).

I found two nests with eggs in the Jihu in November. These were placed, one within two feet of the ground on the end of a bent-down branch of *Brachylæna,* supported loosely by trailing stems of *Smilax Kraussiana*; and the other, not much higher, in the centre of a dense bush of *Rhoicissus zanzibarensis*. The latter nest, which I have kept, is 6 inches in diameter by 1·5 deep; the cup, as always, being very shallow, with a depth of only 0·75. Externally it is composed almost entirely of dry grass, weed-stems, and one or two twigs, and is lined moderately densely with the fine reddish-brown midribs of some pinnate leaf, already noted in the case of *D. guttatus*. Two apparently is the full clutch. The eggs in each case greatly resembled those which I described in a former number of 'The Ibis' (1907, p. 48), the ground-colour being a very pretty pale Hedge-Sparrow blue. They measure from 23 to 24 mm. in length by from 16 to 16·5 in breadth. In connection with the first of these nests, I have the following entry in my diary:—"As I heard the bird close at hand, I immediately sat down where I was, within two yards of the nest and in full view (for those who had eyes to see), and remained perfectly motionless. After moving about in the surrounding thickets of burnt scrub, uttering constantly a low grunting note, the male finally came into view, and moving closer and closer, always grunting, perched finally on the long horizontal branch supporting the nest, and, sidling down towards it, burst into song" (exactly repeating the performance which I have described above), "though eyeing me suspiciously all the time." The Woodwards' rendering of the note, "Kong-kong-koit!" does not quite represent it as it is uttered by our local birds. Length in flesh (of two males) 7·7 inches. Irides brown-madder.

80. LANIARIUS BERTRANDI. Bertram's Bush-Shrike.

Laniarius bertrandi Shelley, Ibis, 1894, p. 15, pl. ii. fig. 2.

Rh., P. This really delightful songster is quite common in Chipete and the other smaller forest-patches of the district, such as Maruma and those of the Chikamboge Valley. It is really plentiful on the Kurumadzi and in other portions of the lower Jihu, while in portions of Northern Melsetter it appears to be commoner almost than

Pycnonotus layardi; in September last, throughout the scrub-grown glens and along the streams in the neighbourhood of the township itself, I used to hear its notes from morning to night and frequently saw the birds themselves, in pairs, or very occasionally in threes, moving about amongst the scrub or insect-hunting in the branches of the flat-topped thorns and other trees; while thus engaged they would often halt to pipe off a string of their mellow notes with bill well open and pointed upwards. In the same month I heard it on the Lusitu and Haroni Rivers, and found it to be common in the forest-patches and wooded ravines of the Chimanimani Mountains. I also heard it in the low veld in December in the rubber-forests of the Madanda. Unlike Ayres in the case of the nearly allied *L. rubiginosus*, I have found this bird to sing freely all the year round, and during my stay in the Jihu last winter its wonderfully varied notes were constantly to be heard. One of its finest calls, and at the same time one of its commonest, is a loud musical "Kwheeee! Kwhee-kwhee-kwhee, Kwhee-kwhee, Kwhee-kwhee, Kwhee!" its tail being moved slightly up and down with each note as it utters it. Other musical calls which I have not yet described are "Whi-ho, whi-ho, whi-ho, whi-ho, whee!" and a Nightingale-like "few, few, few, few, few, few, few, few!" slightly slower than the "Kwhee, &c." note. When insect-hunting it sometimes utters a rather harsh rolling note.

On the 21st of November I found a nest loosely placed 8 feet from the ground in some small twigs of an *Acacia natalitia* in the grass-jungle close to my camp on the Kurumadzi. Externally it was composed chiefly of the tendrils and stems of *Rhoicissus zanzibarensis*, the material becoming finer towards the centre of the nest, till finally a thick lining of the fine terminal twigs of the thornless wild asparagus (*A. virgatus*), mixed with the reddish midribs of a certain pinnate leaf (probably *Albizzia*), is reached: a shallow nest, the cup being only 1·25 inches deep; total depth 3·4, diameter 5·2 and 3·75 (an oval). It contained one unfledged nestling. Four birds measured in the flesh give an average of 7·17 inches, ranging from 6·9 to 7·4. The bill is black, blackish in the female, with a light grey base to the lower mandible, the feet are light blue-grey, and the iris bright brown-madder (in one female deep sienna-red). The stomachs examined have contained large larvæ, beetles, hymenoptera, and a mantis.

81. LANIARIUS OLIVACEUS. Olive Bush-Shrike.

Rh., P. Though by no means so plentiful there as *L. quadricolor, L. sulphureipectus*, or *L. bertrandi*, this Bush-Shrike is not unfrequently seen in the lower Jihu moving about in the bush or flying across open spaces.

On August 19th I secured a female in my *Solanum* hedge on the outskirts of Chirinda, and I had previously once noted it on the outskirts of Chipete. The average length in the flesh of four of these Shrikes was 7·7 inches, with a variation of from 7·4 to 8·2. Bill: upper mandible and point of lower dusky or blackish, rest of gonys pale horn-colour. Feet light blue-grey with a tinge of flesh-colour. The stomachs contained a large tarantula, larvæ (in one case nine), beetles, and grasshoppers.

82. LANIARIUS MANNINGI. Manning's Bush-Shrike.

Malaconotus manningi Shelley, Ibis, 1899, p. 314.

Rh. On the 19th August, 1906, I watched a pair of these handsome Shrikes moving about quietly amongst the foliage on the outskirts of Chirinda and secured the female; on the 27th of the same month I observed a third at the same spot, and on the 13th of April of this year Odendaal shot a fine male about 200 yards higher up on the forest-outskirts.

The hen-bird measured 7·7 inches in the flesh, the male 7·35 ; bill in each case black: irides of the former pale broken crimson-pink, feet leaden-grey ; irides of the latter a pretty shade of deep burnt-carmine, feet bright blue-grey with dull creamy soles. The stomach of the first contained three larvæ, a large wasp, and beetles. This is the Nyassaland form of *L. abbotti* (Richm.), recorded now for the first time from South Africa.

83. LANIARIUS SULPHUREIPECTUS. Orange-breasted Bush-Shrike.

Rh., P. Occasionally seen about Chipete or the lower portion of Chirinda and a common bird on the Kurumadzi River, where I caught frequent glimpses of it in the jungle and constantly heard its clear call "Pipitye, pipitye! Pipipitye, Pipipitye!" continuing sometimes long after sunset. I once attempted to keep one of these birds in captivity, but without success; its alarm-note was a harsh cry like that of *L. starki*. I also secured a specimen in the Zinyumbo Hills in November.

A very large mantis (entire), beetles, and larvæ have been amongst the stomach-contents; one stout hairy moth-caterpillar, swallowed entire (in a stomach which already contained six others), measured no less than 2·4 inches in length. Irides dark or purplish brown; feet blue-grey, in one case rather dark. Average measurement in flesh of four birds 7·35 inches; range 7·1 to 7·65.

84. LANIARIUS STARKI. Southern Grey-headed Bush-Shrike.

Rh. This bird is a great eater of *Neptunides polychrous*, a Cetoniid which is extremely destructive to our pineapples, and nearly every stomach which I have examined has contained its remains.

Care is necessary in handling a captured bird, as they bite fiercely, inflicting nasty cuts. One which I kept in captivity for some time fed freely on locusts, grasshoppers, and larvæ, which it would take from my hand, through the bars, from the first, and would utter, when alarmed by a dog or a cat, a harsh cry (comparable to the squeaking of a cartwheel), which may be rendered "Chichy-chichichy! Chichy-chichichy-chichee!"

On the 12th November I was shown a nest of this bird placed on the terminal twigs of a thin projecting branch of a "Mushungunu" (*Bridelia* sp.), about 20 feet from the ground, on a precipitous slope near the bottom of a wooded kloof close to Chirinda. It was a broad flat structure about

9 inches in diameter, of dry twigs (amongst them several of the common thorny *Smilax Kraussiana*), and resembled a Dove's nest, though broader and more substantial than the average nest of *Turtur capicola*. The depression in which the eggs were laid was slight and unlined, so slight that one could see practically the whole breast of the bird with one's eyes on a level with the nest, as it sat with head forward, tail up, and wings "ajar." The nest was so loosely put together that it came to pieces immediately on being removed from its position. This account differs from Millar's, quoted by W. L. Sclater (Fauna of S. A. vol. ii. p. 32), but there can be no doubt of the identity of my bird, for I shot the female as she left the nest, having first watched her for two or three minutes as she sat. The nest, too, was her own work and not booty taken from a Dove, for the native who shewed it to me had watched its progress from the time that it was only partially built and had reported to me some days later the laying of the first egg. It may, however, have been the work of a young inexperienced couple trying their hand at nidification for the first time. The nest was inaccessible and the eggs, which were four in number, could only be obtained by holding out a butterfly-net at the end of a 20-ft. pole and tilting them into it one at a time with a long stick. They were very large and rounded, with large pale brown and grey blotches, chiefly about the larger end, where in three of the four eggs they form a zone and in the fourth a patch. They vary from 27 to 29 mm. in length (two of them measure 28) and from 21 (three eggs) to 22 mm. in breadth. The stomach of the female contained the remnants of a small bird. Five birds measured in the flesh averaged 9·95 inches, the smallest being 9·5 (a female) and the largest (a male) 10·3. The irides are gamboge, varying a good deal in intensity, and the feet usually pale blue-grey, in two cases dull grey.

85. NICATOR GULARIS. Zambesi Green Shrike.

Rh., P. During my stay there in the latter half of November the Zambesi Green Shrike was very common throughout the denser patches of bush on the Kurumadzi and elsewhere in the lower Jihu, judging by the frequency with which one heard its call. I succeeded three times in stalking and watching a bird as it sang; but this was by no means easy, for not only was it exceedingly shy, but it invariably haunted the higher foliage, where its protective coloration rendered it very difficult to detect even when singing. One of the higher branches or twigs of some large tree, standing in the midst of smaller dense bush, seemed to be their favourite perch, and from here they would pour out their song continuously for many minutes on end, a loud musical "Chíkuwu, chikwu, chi!" which sometimes ends with a Nightingale-like "tyo-tyo-tyo"; this is alternated with a harsher "Tyiurrr!" and the intervals between are commonly filled with the repetition, one by one, of all kinds of short low whistling notes. The head is craned forward and the throat swells, but there is no other movement, the bird remaining motionless on its perch while the song lasts. One which I watched was being answered at intervals by the "tyurrr" note from lower down, probably by the sitting hen, but I was unable to locate the nest, the thicket being thorny and impenetrable save by axe. I have never heard this Shrike while in the Jihu in August; possibly, though so noisy in the breeding-season, it may become silent in the winter. I came across it constantly during my December to January trip across the low veld, noting it particularly in the neighbourhood of Chibabava and thence to Chironda and on to Umhlonhlo, and south to Arucate. It seemed to be commonest in the patches of forest and wooded dongas in the neighbourhood of the Idunda River and in the rubber-forests of the Madanda, where I again succeeded in watching one as it sang. A male which I shot in the Jihu measured 9·7 inches in the flesh. Its bill was dark grey, its irides medium grey-brown, its feet light grey, and its eyelids yellow and somewhat thickened. The stomach contained the remains of grasshoppers and beetles.

86. **Sigmodus retzii tricolor.** Zambesi Helmet-Shrike.

Chindao: "Mariganyama."

Rh., P. I have come across flocks of this handsome Helmet-Shrike not infrequently during the past year in the open woods about Chirinda, and during my journey across the low veld I found it in quite a number of localities, securing specimens at Gezanye, Arucate, and Indabila. Most of the birds in these parties were in immature plumage. They commonly utter all together a low pleasant note, but their vocabulary is varied and some of their calls distinctly quaint; I quote the following from my note-book (Sept. 8th):—"A flock of *Sigmodus retzii* was busy insect-hunting in the branches of a small grove of *Uapaca Kirkiana*, near the western drift of the Inyamadzi. On my firing a shot they uttered a most striking note of apparent wonder: 'Turee-whoooo!' slowly, followed by a rapid 'Turíka-whoo Turíka-whoo turíka-whoo!' I subsequently sighted them again, but they were now thoroughly alarmed and, keeping to the tops of the higher trees and uttering a peculiar rolling guttural note, they took long flights from grove to grove and finally crossed the valley."

The bill, eye-wattles, and feet of an adult male were vermilion, the former becoming yellowish at the tip; in a female not actually breeding the extreme point and culmen were dusky, the irides deep gamboge (nearly orange), and the feet orange-vermilion; while in an immature male the bill was dark horn-colour, paler and yellowish on the lower surface of the gonys and along the basal half of the commissure, and the irides light brown. The stomachs of these birds contained beetles, larvæ, a fair-sized mantis, and a large grasshopper. 8·86 inches is the average measurement in the flesh of four of these birds and 8·7 and 9·1 the variation.

87. **Prionops talacoma.** Smith's Helmet-Shrike.

Chindao: "Mariganyama."

Rh. These birds will sometimes follow a grass-fire, feeding on the roasted insects left in its wake. Four specimens measured in the flesh vary from 7·75 to 8 inches, and a *Phasma*, a mantis, and beetles (including a small but very destructive *Colasposoma*) were amongst the contents of the stomachs examined.

88. Crateropus kirki. Kirk's Babbler.

Singuni: "Idhlekedwana."

Rh., P. A common bird in the grass-jungle of the Jihu and the Inyamadzi, where I found it feeding along the open road. During my last journey across the low veld I came across several flocks, particularly at Chimbuya, between Inyajena and Chibabava, and at Indabila and Inyamita. A nest which I found in 1898 was formed externally of coarse grasses, roots, and fine twigs, and lined with finer grasses and fibres. It was well hidden in the thick fork, about 12 feet from the ground, of a *Parinarium* and contained three very glossy eggs, measuring 24·5 by 19·5 and 23·5 by 19 mm. They were of a uniform greenish-blue colour, with almost the gloss of a Starling's. Three adult birds (*C. kirki*) measured in the flesh 8·7, 9·25, and 9·5 respectively; feet dull ashy grey. One of my South Melsetter skins, which I am unable to find, was identified last year by Capt. Shelley as *C. jardinei* ('Ibis,' 1907, p. 49), so that both species probably occur here.

89. Pycnonotus layardi. Black-capped Bulbul.

Chindao: "Igweturi." Singuni: "Ipotwe."

Rh., P. Although some other bird may become temporarily more plentiful in some particular locality, as were the White-eyes last August in the Jihu, this Bulbul is, on the whole, by far the commonest bird throughout every part of Rhodesia and Mozambique which I have yet visited, excepting only in dense forest such as Chirinda, which, however, it may frequently be found visiting. In the low veld I found it to be commonest between Inyamita and Malata. It is a delightful cage-bird and bears captivity well, thriving on a fruit-diet, though delighted beyond measure when a quantity of locusts or cockchafer-larvæ are thrown into the aviary, or a sackful of leaf-mould fresh from the forest. At the end of July, expecting to be away from home a good deal during the next twelve months, I attempted to liberate those in my aviary, but had the greatest difficulty in inducing them to leave it, those which went out first re-entering time after time. For some weeks afterwards the curious sight might be witnessed daily of a number of Bulbuls clinging to the wires and endeavouring to encage themselves, while, in the evenings, they would roost on the projecting ends of the perches, those remaining inside nestling up to them on the other side of the wire. Even in April (when I left Africa), after the lapse of a breeding-season, one or two pairs might still be seen daily attacking the ripe bananas hanging up in my verandah, a trifle which they were very welcome to for the sake of their cheery notes about the house. These notes, by the way, are uttered throughout the year (contrast W. L. Sclater, Fauna S. A. vol. ii. p. 63). The natives appear to have the idea that most of those they trap are females, and tell the following quaint story, imitating in each sentence the bird's call-notes:—The male, they say, on finding a snare, will hop on to the switch and call three times: "Ngena, utate, ngilibambile! (Go in and take it, I'm holding it)." "Qa, ngisaba! Qa, ngisaba! Qa, ngisaba! (No, I'm afraid)," replies the hen. The male repeats the call and she goes in. Back springs the sapling and she is caught, and her husband crying "Kade ngutshela! Kade ngutshela! Kade ngutshela! (I told you so)," goes in and secures the bait for himself.

The nest is placed at from 3 to 15 feet from the ground, in a bramble, a tangled mass of climbers, the fork of a tree, in a shrub or clump of tall weeds or on a horizontal branch; twice I have found it in a bed of bracken, tastefully poised on a broad frond with but a slight further support from one or two others at the side. It is usually a neat cup composed of fine grasses and enclosed within a lighter but rougher casing of coarse grass-stems intermixed with, or occasionally replaced by, dry herbaceous stems, roots, bark-fibres, or twigs, often those of the common thorny *Asparagus angolensis*. One noted last season measured 2·8 inches in diameter and 1·75 in depth. The eggs vary considerably, being usually either pinkish or purplish white (sometimes actually pink) in ground-colour, freckled, blotched, and spotted, usually all over, though more densely in the form of a zone round the large end, with brown-madder or various other shades of rich purplish brown. Handsome types are those in which the markings take the form of large irregular blotches of (1) the same rich purplish brown, (2) light chestnut. Another type approaches a form of the Tree-Pipit's egg, being thickly and finely mottled with different shades of purplish brown, sometimes to such an extent as to obscure the ground-colour, the markings being, in this case too, densest and darkest as a rule about the larger end. Iron-grey spots or blotches, often pale and apparently underlying, are present in almost every case. The measurements of eggs in my collection vary from 20 to 25 mm. in length by from 15 to 18 mm. Only in one case have these Bulbuls shown any excitement on my visiting their nests; they almost invariably leave the nest quietly and one sees and hears no more of either bird—strange behaviour in a bird which is so noisy over snakes and hawks.

In the Jihu, in common with so many other birds there of the grass-jungle and open woods, they were usually to be found at the *Leonotis*-blooms. As it is a matter of dispute whether this bird's ravages in the settler's orchard is counterbalanced or not by its destruction of harmful insects, a detailed list of the stomach-contents of nine Bulbuls, secured at one shot while destroying one of my papaws, may be of interest:—Mulberries only; a large seed and much insect débris, including a white ant; fruit-pulp (papaw) and one *Physalis* seed; three Leguminous seeds and slight insect remains; much débris of a large metallic bug, common on the "Musuguta" (a large *Croton*); two or three seeds of *Physalis edulis*; three Reduviid bugs only; nil; skins of berries. Of six other stomachs examined half have contained fruit (wild figs, *Lippia*, &c.), and the other three insects. Eight of these Bulbuls averaged 8·3 inches in length, with a variation of nearly an inch, 7·75 (an exceptionally small specimen) to 8·7.

90. CHLOROCICHLA OLEAGINEA. Peters' Bulbul.

Chindao (at Chibabava): Ichwikidjóri."

P. I shot one of these Bulbuls, a male, on the 7th of December, at Gezanye, moving about quietly in the foliage of a large tree. It was evidently breeding, to judge by the development of the testes. It measured in the flesh 8·1 inches, and its stomach-contents were a large green larva and the remains of fruit.

91. CHLOROCICHLA OCCIDENTALIS. Damara Bulbul.

Chindao (at Chibabava): "Ichwikidjori."

P. I have noted this bird on the Umswirizwi, on the Umtefu River, at Inyajena, and at several other points between Mt. Singuno and Chibabava, both in open and dense bush; also at Bimba. Both in the *Brachystegia* woods at Arucate and in the Madanda forests it is common, and in the high veld I have found it, always in dense bush, in the valley of the Inyamadzi and (in the Mafusi country) in the Maruma forest-patch and the smaller patches of the Chikamboge Valley. In the Jihu it is plentiful in the dense bush of the Kurumadzi, though far more often heard than seen. While the bird was still new to me I have time after time followed its harsh "Barac-barac!" or tinny "twe-twe-twe, &c." notes from point to point without once catching sight of it, though always within a few yards, so cleverly does it utilize its protective coloration amongst the green foliage of the trees.

I have twice taken the nest of this Bulbul, in November and December, one in the dense bush of the Jihu, slung at a height of about seven feet between the thin hanging stems of a climbing fern (*Lygodium subalatum*), and the second nine feet from the ground in a bunch of upright suckers growing from the horizontal branch of a large thorny *Flacourtia* in the open woods near Chibabava. The latter was a shallow, loose, clumsy structure, composed of the dry stems of climbing and other herbs and lined with similar but finer stems and the thin midribs of pinnate leaves. The other was similarly lined with the midribs of *Albizzia fastigiata*, but composed, externally, chiefly of soft white grass-blades, some twigs, and one or two strips of bark of *Markhamia lanata*; a long tail of these grass-blades hung from the side of the nest. The eggs varied slightly, the ground-colour being pale olive and olive-tinged white (hardly visible), respectively, much marbled, blotched, and smudged with darker olive-brown of various shades, the darkest markings taking the form of spots and streaks. In the latter there are also rounded spots of deep grey, chiefly about the larger end. They measure 1 inch by 0·7 and 0·91 by 0·64 respectively. The nests measured 4·3 and 3·3 by 3·75 respectively in diameter, by 3 inches in depth, that of the cup varying from only 0·75 in the Chibabava nest to 2·1 inches in the other. The sitting bird leaves the nest at once on one's approach and does not return for a considerable time, when her mate also puts in an appearance, and, if the intruder continues to remain, they finally lose patience and shew themselves frequently and freely, flying away for a few seconds only and constantly returning, uttering their "Barac" note all the time with great anxiety.

The bill is always grey-brown, the base of the gonys paler, and the feet light blue-grey, in one specimen dusky grey. The stomachs have in all four of my specimens contained wild fruits and, in one, three large "soldier" termites as well. These four birds averaged in length 8·41 inches in the flesh, varying from 8·1 to 8·7.

92. Phyllostrophus capensis. Cape Bristle-necked Bulbul.

Rh., P. Very common in the denser bush of the Kurumadzi and hardly less so in the grass-jungle. I have also noted them in the Inyamadzi Valley, in that of the Chikamboge, and commonly in and near the forest-patch of Maruma. In the low veld I heard them in the denser bush about Boka and the Idunda River, in the thick scrub along the Buzi at Chibabava, and in the Madanda forests, where they appear to be common and where a party passed close beside me on the ground as I was carrying out a root-tapping experiment. An egg of this species which I found this year completely lacked the darker markings, the lighter olive-brown of the zone being carried down to a large extent over the rest of the egg in broad long blotches. I watched this nest for about an hour, during which time the cock-bird kept up a ceaseless scratching amongst the dead leaves on the ground round the nest, always keeping in touch with his mate (within five yards or so); the hen only once left the nest and joined him for a few minutes. They were unusually silent, a low croak from the male at intervals being all they attempted in the way of music while near the nest, though I could hear loud and continuous croaking from a party at a little distance away. The following day I found some feathers and a broken egg in the nest, the sitting bird having probably been taken by an *Astur tachiro*, the only Hawk that I have yet found within the forest. This nest possessed nothing worthy of the name of a cup, being nearly flat, but below were massed, probably with a view to disguise, a quantity of leaves, dry and half-skeletonized, and the nest in general was a far more substantial structure than either of those belonging to this species which I had previously examined. One was as high as eight feet from the ground.

Spiders, moths, grasshoppers, larvæ, a large bug, a fly, and a termite were amongst the contents of the nineteen stomachs examined, though beetles and the berries of the *Celtis* formed the bulk of the food consumed. Fifteen of my specimens averaged 7·8 inches in the flesh, the range of variation being from 7·4 to 9 inches. No. 1265, a female shot in Chipete on April 4th, 1907, has a peculiarly dark chest, the white of the throat being very distinctly shut off as a separate patch, while the light shaft-stripes of the ear-coverts are nearly as conspicuous as in *P. milanjensis*; there are also faint yellow markings on the lower breast.

93. PHYLLOSTROPHUS FLAVISTRIATUS. Yellow-streaked Bulbul.

Rh., P. This Bulbul probably varies slightly in its habits according to the nature of the season. On March 11th, 1906, it had already congregated into small flocks, but a month later in 1907, a late wet season, it had not yet done so to any extent, but still remained in pairs which were playfully chasing each other about in the forest with crackling wings. I have seen it taking a leading part in mobbing an Owl (*Syrnium*), accompanied by *Batis erythrophthalma, Phyllostrophus milanjensis,* and other forest-species.

It occurs in the Jihu (2000 ft.), where I saw one on August 4th in the Kurumadzi bush, as well as in Northern Melsetter, on Mount Pene, where I noted several in the forest in September (6500 to 7000 feet). They are easily recognisable even at a distance or in gloomy foliage by their peculiar habit of flapping one wing.

At four nests during the present season the sitting bird attempted to lure me away, on three of these occasions feigning a broken wing. Of one I wrote:—"She sat till touched and then, slipping off the nest, struggled along the ground in capital imitation of a broken wing. I followed to see what she would do, and whenever I lagged behind she would get up into some low shrub and call loudly several times, again, on my arrival, struggling along as before. At last, having got me, as she thought, far enough away, she flew up into a low tree and defied me openly. Just afterwards I came across another nest of this Bulbul, containing two recently-hatched young. In this case there was no feigned lameness but real alarm, the female (presumably) keeping up a constant noise (the usual alarm-note 'tyi-tyi-tyi-tyi-tyi, &c.') accompanied by the usual flapping of one wing, while the male sat there stolidly or moved about with the female but without uttering a note, merely keeping on raising a wing." I have found only two nests supported from below (by a fork and by *Dracæna* leaves respectively); almost invariably they are slung from above.

In the young bird the bill is deep sepia, paler at the point (in the adult it is black), the feet pale grey, the gape yellow, and the irides dark brown. An adult female which I secured in August had the feet dark dusky grey instead of blue-grey, quite an unusual thing. I have measured thirteen of these birds in the flesh, resulting in an average of 7·82 inches and a variation of from 6·5 (a very small female) to 8·5. The nestling (No. 1071), nearly fledged, resembles the old bird in the coloration of its upper surface, but has the breast duskier and mere traces of the future yellow markings. Bill 0·6; wing 2·25; tarsus 0·75.

94. PHYLLOSTROPHUS MILANJENSIS. Milanji Bulbul.

Xenocichla milanjensis Shelley, Ibis, 1894, p. 9, pl. i. fig. 1.

Rh., P. In calling to one another these birds will frequently sidle along the branch with little hops, or take a short-paced run along it for a few inches at a time. This is a far more frugivorous Bulbul than *P. flavistriatus*: 26 stomachs have been examined up to the present, of which twelve contained fruits only (those of the forest *Celtis* and of a fine *Maba* are the favourites); seven, fruits and insects; and only seven, insects alone.

Seventeen of these birds averaged 8·04 in the flesh, with a maximum of 8·5 inches and a minimum of 7·6.

95. SYLVIA SIMPLEX. Garden-Warbler.

Rh. Between April 3rd and 10th of this year I again twice noted one of these birds in a tall *Solanum*-hedge on the outskirts of Chirinda, working along amongst the upper twigs in search of insects and occasionally stopping to utter its loud and fluent song.

96. PHYLLOSCOPUS TROCHILUS. Willow-Wren.

Rh., P. On my return from the low veld this year I began to find this Warbler when ascending through the upper Jihu on the 10th January, and it remained plentiful in the neighbourhood of Chirinda, carefully searching the foliage of my rubber and castor-oil plants and frequenting both grass-jungle (where the foliage of the thorny Acacias appears to be particularly attractive) and the outskirts of the forest. It disappeared this year in the middle of March, and last year I did not see any after the 11th of the same month.

97. ACROCEPHALUS ARUNDINACEUS. Reed-Warbler.

P. I secured one of these fine Reed-Warblers in the open bush on the borders of a series of large pools near Chibabava on December 12th. It measured 7·4 inches in the flesh, and the stomach contained beetles and other insect débris.

98. ACROCEPHALUS PALUSTRIS. Marsh-Warbler.

Rh., P. I have hitherto only twice noticed the Marsh-Warbler in Gazaland, securing a male in the open bush near some pools at Chibabava on December 12th, and again on the 2nd February in the long grass near Chirinda, shooting one of a pair which were moving about among the grass-stems like Cisticolas and answering one another with a loud, somewhat long-drawn note. The stomachs contained beetles and a small grasshopper. The birds measured in the flesh 6 inches (male) and 5·5 (female).

99. SCHŒNICOLA APICALIS. Fan-tailed Reed-Warbler.

Rh., P. Occasionally seen in the neighbourhood of Chirinda and in the grass-jungle between that place and Spungabera. On taking to the wing it makes a short, low flight and is most difficult to flush a second time, seeming to burrow right down to the very roots of the grass and remaining there till practically trodden on, when it sometimes repeats the manœuvre. The two males in my collection each measured 6·5 inches in the flesh: upper mandible blackish, lower very pale blue-grey; feet pale greyish brown; irides yellowish brown. The stomachs contained beetles and grasshoppers.

100. EREMOMELA SCOTOPS. Dusky-faced Bush-Warbler.

Rh. On the 27th of September, on the Haroni, I shot three of these noisy little Warblers. The first was sitting alone on the top of a large *Brachystegia* before sunrise uttering a loud and monotonous "Tip-tip-tip, &c.," repeated without a pause *ad infinitum*; and the others were secured later out of a large party searching for insects amongst the blossoms of the same trees (*B. randii*); the whole party would constantly break out into a loud bubbling "Nyum-nyum-nyum-nyum, &c.," chasing each other about in great excitement as they did so. Again, on November 4th, I came across two separate parties within a mile or two of Chirinda, noisily engaged in insect-hunting in the Brachystegias. The four in my collection measured from 4·7 to 4·9 inches in the flesh. Bill black; irides yellowish white; eyelids ochreous chestnut; tarsi and feet light pinkish brown. The stomachs contained minute insects, apparently flies and aphides.

101. Camaroptera olivacea. Green-backed Bush-Warbler.

P. I found this little Warbler to be not unplentiful in the dense bush of the Kurumadzi during August. In appearance it might be mistaken at a little distance for the female of the other common Bush-Warbler, *Chlorodyta neglecta*, but I always found it keeping low in the bush, whereas the other appeared to prefer the higher branches. Its kid-like note varies a good deal, being weak, shrill, and long-drawn in some individuals and in others short and with quick regular intervals, exactly as though one were to squeeze an india-rubber toy goat in and out fairly rapidly several times in succession. I have heard only one which I could have taken for a real kid; the bleat was weaker, but might have been taken for a kid calling at a little distance. At the same time I think that its ventriloquial powers may have been somewhat exaggerated, for personally I have not found the least difficulty in locating the bird from its note.

I also noted this Warbler at Zinyumbo and near the coast within a few miles of Beira.

Length in the flesh 4·1 to 4·25 inches; irides orange-chestnut. The stomachs contained the débris of minute insects.

102. Sylviella whytei. Whyte's Warbler.

Sylviella whytei Shelley, Ibis, 1894, p. 13.

Rh., P. I secured a female on the 1st of December, in the large open bush near the Chibabava rubber-plantation, carefully searching the higher twigs of a *Peltophorum* for insects. Its stomach contained a larva, a small beetle, and two or three moth-ova. Odendaal has recently sent me another shot by him near Chirinda on April 24th. The three specimens measured 3·7, 3·75, and 3·9 inches, respectively, in the flesh: upper mandible dark sepia, lower pale pinkish grey or whitish, feet pale brownish yellow (in Odendaal's "very pale pink"), and irides brownish yellow-ochre. The stomachs contained a larva, beetles, and ova.

103. Apalis thoracicus. Bar-throated Warbler.

Rh., P. This little Warbler has become a great frequenter of my thorn-hedges, where several pairs may be found at any time searching for insects and calling to one another with their sharp "pee-pee-pee" note. This is usually like a weak edition of the call of *Lophoceros melanoleucus*, though occasionally, for it varies somewhat, it rises and falls like that of our common squirrel (*Sciurus palliatus*), but in this case it is, of course, much weaker. This bird is very common on the Kurumadzi, chiefly in and about the outskirts of the dense bush, and I have found it at Maruma in September searching the Clematis-vines for insects.

I have taken eggs this season which differ from those which I have already described in having large, pale *pink* spots and blotches on (1) a white, and (2) a pale blue ground. The owner of one of these clutches shewed considerable cleverness. Being doubtful about her identity and having waited in vain to see her, I attempted to trap her, but she made a fresh entrance on one side of the noose (which was quite inconspicuous), and on my twice netting these new entrances up with bark-fibre, again a second and a third time perforated the nest in a fresh place rather than enter by the original opening.

These little Warblers vary noticeably in size, those with the broader band appearing to be always the largest; nine, measured in the flesh, average 4·88 inches, the largest broad-banded bird being as much as 5·2 inches in length, and the smallest narrow-banded specimen 4·25. In the nestling the bill is light brown, the iris deep brown, and the feet very pale pinkish grey. When barely able to flutter (Nos. 1080 and 1081) it already resembles the old bird in plumage, differing chiefly in the fact that the breast immediately below the pectoral band is more strongly tinged with (dusky) yellow than in the adult, and that the yellow of the abdomen is duller and more buffy in tone. The breast-band itself is light dusky brown and inconspicuous. Bill 0·46; wing 1·57 and 1·6; tail 0·77; tarsus 0·78 inches.

104. APALIS CHIRINDENSIS. Chirinda Warbler.

Apalis chirindensis Shelley, Bull. B.O.C. xvi. p. 126 (1906).

Rh. I have never seen this Warbler except in Chirinda and Chipete, in the former of which forest-patches it may be commonly seen in the early morning. It varies somewhat in the coloration of its bill, &c., the gonys being sometimes blackish like the upper mandible, at others brownish white, either at the base only or throughout its length. The feet may be pale pinkish brown or pale vandyk-brown, and the irides, too, vary slightly in shade.

105. CHLORODYTA NEGLECTA. Eastern Black-breasted Bush-Warbler.

Rh., P. A silent and assiduous insect-hunter, by no means uncommon on the Kurumadzi, where during August I usually found it moving about quietly amongst the higher branches of the thorns or of the denser bush, the conspicuous breast-spot of the male, together with its habits, serving even at a distance to distinguish it from the other common Warbler, *Camaroptera olivacea.*

I noted a pair on the outskirts of Chirinda on October 24th, 1906, at an elevation of 3700 feet.

Bill black, in one case with a white commissure; irides dull orange, wattled eyelids pale brick-red. The stomachs contained, two ant-pupæ, several larvæ, a small weevil, a Cetoniid, and other small insects. Three of these Warblers in the flesh measured in length 4·5, 4·7 (females), and 4·9 inches (male) respectively.

106. PRINIA, sp. inc.

Rh. In September of last year and again in April of this I found this noisy Warbler commonly at Melsetter, going about in very large parties in the dense scrub covering the sides of the ravines. They kept well hidden whilst thus engaged, and while one would be expecting them to reappear near the spot where one had last seen them, they would suddenly emerge with a harsh chattering chorus fifty yards away. Occasionally they would ascend into the branches of the large flat-topped thorn-trees and search their foliage diligently for insects, every now and then breaking out into their loud chattering. They only frequent dense vegetation and were plentiful in the forest-patches and wooded glens of the Chimanimani Mts. and in the Mt. Pene forest in September. I have never found them much below 6000 feet. I may add that *Prinia mystacea*, one form of which appears to approach the present species in coloration, was also common in its ordinary local plumage at the same time in the *grass-veld* of the same localities, singly or in pairs, and the contrast between the habits of the two birds was very striking.

A male in my collection measured six inches in the flesh; its bill was deep sepia, nearly black, its feet light vandyk-brown, and its irides raw sienna: a second, probably a female, measured 5·4 inches. The stomachs contained small flies, a small green caterpillar, and a beetle.

107. PRINIA MYSTACEA. Tawny-flanked Wren-Warbler.

Rh., P. More or less common in all portions of Gazaland which I have yet visited, in pairs or in family-parties. I have found it along the streams of the upper Jihu and throughout the grass-jungle of the lower, in the Inyamadzi Valley, at Maruma, and in the Chikamboge Valley, throughout Southern Melsetter, and, in Northern Melsetter, on the Lusitu River and at the township itself. It is equally abundant throughout the low veld, localities which I have specially mentioned in my note-book being—to the west of Chibabava, the Umtefu and Muzala Rivers, and Inyajena; and to its east, Chironda, Boka, the Idunda River, Umhlonhlo, and Inyamita. At Chibabava itself it was fairly plentiful, both in the rubber-plantation and in the open woods, and also frequented the tall *Cyperus* which nearly filled some large pools in the neighbourhood.

The stomachs have contained a borer (*Bostrychidæ*) and other small beetles, larvæ, and small flies, and I once saw one capture a moth on the wing. Ten of these birds averaged in the flesh 5·35 inches, ranging from 4·8 to 5·95.

108. CISTICOLA CINERASCENS. Grey Grass-Warbler.

Chindao: "Chitiwa." Singuni: "Itsiyana." Both these names are applied to all Grass-Warblers.

Rh., P. By far the commonest *Cisticola* of the Jihu; in fact, I have up to the present noted no other there, though during my stays on the Kurumadzi in August and November I shot and trapped a long series of these birds. It at once took advantage of the paths which I had cleared through the jungle and was constantly to be found feeding along them. When not engaged in insect-hunting it will sidle with short hops up a tall grass-stem till it topples over with its weight, then on to the next and so on, all the time jerking its wings and tail, which latter, except when the bird is at rest (a rare event), is held upright like a Wren's and is jerked yet further forward with every "cweeet" (a loud musical call, Zulu "c") or harsher "trrr"; occasionally the bird will stop to preen its breast-feathers and wings. I once near Chirinda heard a male continually uttering a repeated cicada-like note which was new to me; his mate was replying with the more usual call. Quite a number of these weak-flighted Warblers must be destroyed annually by the great jungle-fires, as when the flames dash up some slope with a roar to consume some particularly dry patch of grass, or, carried by a gust of wind, lick up 50 or 100 yards at one sweep; but under ordinary circumstances the majority certainly escape, some managing to keep ahead of the flames (I have found numbers flying into Chirinda for refuge in front of such a fire, the only occasion in the year on which they enter the forest), and others flying back over them into the burnt area behind. It is wonderful how full of birds of this and other kinds a "burn" will often become as soon as the flames have passed through, all hunting and on the alert for such grasshoppers and other insects as the flames have roasted and left behind. In the low veld I noticed several of these Warblers between Chibabava and Madanda forests. I have not yet recognised it in Northern Melsetter.

The stomachs examined (19) contained small beetles, larvæ, ants, flies, and a spider, but chiefly the first. In the young bird the upper mandible is blackish, the gonys and the gape pale ochreous, irides dull brown (ochreous-orange in the adult), and feet dull whitish (in the adult pale pinkish brown or pale pink). Twenty-four of my specimens averaged in the flesh 5·1 inches, varying from 4·5 to 5·6.

109. Cisticola erythrops. Rufous - fronted Grass-Warbler.

P. I secured a male, the only occasion on which I have seen this Grass-Warbler, at the pools near Chibabava on December 12th, 1906. It measured 5·7 inches in the flesh; bill, upper mandible blackish brown, lower (except tip) whitish; feet palest brown; irides light brown; contents of stomach small beetles and other insects. This species had been previously obtained by Alexander on the Zambesi.

110. Cisticola subruficapilla. Grey-backed Grass-Warbler.

Rh., P. Unusually plentiful in the neighbourhood of Chirinda during January and February of the present year, both in pairs and in family-parties, evidently the result of a successful breeding-season. They frequented my coffee-plantation in particular, feeding along the ground or peering up under the leaves of the lower branches for such insects as might be hidden there. It is a common species throughout Southern Melsetter, though south of the Buzi it has to give precedence to *C. cinerascens.* Between that river and the Lusitu I should judge the two to be equally plentiful, but in Northern Melsetter the present is undoubtedly the dominant form. I have noted it along the Nyahode Valley, on the hills to the north of the Lusitu, about the township of Melsetter itself, high in the Chimanimani Mts., and on Mt. Pene. It does not appear to occur in the Jihu.

Thirteen specimens measured in the flesh varied in length from 4·75 (an exceptionally small bird) to 5·75 inches, and averaged 5·32. Their stomachs contained small flies, grasshoppers, termites, ants, and especially small beetles.

111. Cisticola rufa. Fraser's Grass-Warbler.

P. I first saw this small Warbler at the Zinyumbo pools on November 25th, 1906, flying from one low bush to another continually; twice between that place and the Umtefu River during the next two days; again at the Umtefu in January 1907; and at Mangunde's, 12 miles east of Chibabava, on the 17th of December. The last was a female, which I secured after watching it for some time, while lying under the shade of a low bush awaiting my carriers. It was a most vivacious little bird, never still for an instant and accompanying every movement with rapid jerks of the tail as it searched for insects within four feet of my face. Later in the same month I noted it at Inyamita. All these instances, with only one exception, were of solitary birds, presumably mostly males, their mates being probably engaged at the time in incubating.

My two specimens measured 4·1 and 4·2 inches respectively in the flesh. The upper mandible was brown, the gonys paler with a whitish base, and the feet were in each case pale brownish flesh-colour; irides "deep ochreous" and "light golden brown," the same colour being probably referred to in each case. The stomachs contained small beetles and other insect débris.

112. Cisticola natalensis. Natal Grass-Warbler.

Chindao: "Idiwamatoro."

Rh., P. Of the eleven specimens of this Grass-Warbler in my collection the six in typical plumage were shot on the following dates: May 12th, 1905; June 7th, 1905; June 6th, 1906; June 11th, 1905; July 1st, 1906; and July 3rd, 1906. Those in the livery of *C. curvirostris* I got on February 3rd, 1907; March 7th, 1906; March 13th, 1906; and April 3rd, 1906 (two males with highly developed testes and with no indication yet of a change to *C. natalensis*).

During the latter months the bird may frequently be seen perched on the top of a *Parinarium* or other small tree in the open grass, slowly repeating "Trweeee! trweeee!" &c., each note being accompanied by a nervous little movement of the wings and answered sometimes by the same note from another tree, often at some distance away.

The contents of ten stomachs examined were larvæ, mostly large, a mantis, a small centipede, small flies, grasshoppers, and beetles, chiefly the latter, including two specimens of the *Colasposoma* which is so destructive to our young cypresses and eucalypts. Seven birds measured in the flesh, and varying from 5·25 to 6·25 inches, gave an average of 5·9.

113. HELIOLAIS ERYTHROPTERA.

Heliolais erythroptera Reichenow, Vög. Afr. iii. p. 570.

P. On August 10th, 1906, I shot a male of this species in grass-jungle on the Kurumadzi, elevation 2000 feet; it was one of a pair which were moving about and feeding in company with one of the usual loose flocks of small birds, and on the 12th I secured two further specimens at about the same spot. They were very conspicuous birds, the creamy white of the breast and the bright chestnut wing-patch being recognisable at quite a distance, and they were by no means shy or retiring in their habits, moving about high in the grass-stems and sometimes settling in trees. Their note, which was frequently uttered, was a loud smart "Pee-pee-pee-pee-pee!" a little like the commoner call of *Apalis thoracicus*.

In the low veld I noted this bird at the Zinyumbo pools on November 25th, and on the following day in open bush on the Mwangezi River, while later again I saw it near Chimbuya. Length in flesh 5·2, 5·35, and 5·5 inches respectively. My specimens shewed some variation in the colour of their bill, the upper mandible in two cases being light brownish grey, the lower paler grey, while in the other two only the base of the latter was whitish and the rest of the bill dusky brown; irides (of all) ochreous-orange, eyelids the same, but duller; feet light sienna-yellow in three, in one palest orange-brown. The four stomachs contained beetles and small larvæ. This species has not been recorded previously from south of Nyasaland.

114. SPHENŒACUS NATALENSIS. Natal Grass-Bird.

Rh. I have up to the present noted only one of these birds, a male which I shot in a kloof near Melsetter on September 22nd, where it was perched quietly on the upright stem of a *Dombeya*. It measured 7·2 inches in the flesh; the upper mandible was deep sepia, the lower, as also its feet, pale bluish; irides carmine. The débris of beetles and a large hairy Bombycid caterpillar filled the stomach.

115. TURDUS MILANJENSIS Shelley. Milanji Thrush.

Turdus milanjensis Reichenow, Vög. Afr. iii. p. 688.

Rh. I made some mention of the habits of this, the common Thrush of Chirinda, in my last paper under the erroneous heading of *T. cabanisi* ('Ibis,' 1907, p. 60).

Eight of these birds averaged 8·45, ranging from 8·15 to 8·9 inches in the flesh. Bill—upper mandible brown, its commissure and the whole of the lower orange; feet deep raw sienna, the back of the tarsus gamboge; irides brown. Seven stomachs examined contained a weevil, a centipede, small beetles, a large Elaterid larva, Diptera, Melolonthid and other larvæ, a large millipede, snails (including fragments of a large *Achatina*), and the berries of *Celtis* and of a large *Strychnos*.

This is a Nyasaland species and new to South Africa.

116. TURDUS TROPICALIS Ptrs. (*T. libonianus* of my last paper, 'Ibis,' 1907, p. 60). Peters's Thrush.

Turdus libonianus tropicalis Reichenow, Vög. Afr. iii. p. 693.

Rh., P. I shot one of these birds (the common Thrush of Southern Melsetter) on the Kurumadzi in November: it was hunting for insects in the clods of a recently-hoed field in the early morning, after the manner of the English Thrush. I also saw it at Gezanye, between Chibabava and the Madanda.

Bill and eyelids bright orange; tarsi and feet rather variable, usually some tint of raw sienna tinged with brown or flesh-colour. Eight of these Thrushes averaged in length 8·47 inches, with a maximum and minimum of 8·25 and 9·5 (an exceptional specimen) in the flesh.

117. MONTICOLA ANGOLENSIS. Angola Rock-Thrush.

Rh., P. A fairly common resident species, chiefly found up to the present in the *Uapaca* groves in the neighbourhood of Chirinda, and in those between the Inyamadzi and Buzi Rivers, where, though distinctly shy, it is fairly common, its orange abdomen and blue head and back being conspicuous at a distance. I also once saw one in the upper Jihu. It flies straight up into the nearest tree on being disturbed.

Four males average 7·68 inches in the flesh, varying from 7·5 to 7·85, and two females measured 7 and 7·25 inches respectively. The stomachs contained the débris of beetles, a number of large winged termites, a large beetle-larva, and remnants of ants and other insects.

118. PRATINCOLA TORQUATA. South African Stone-Chat.

Chindao: "Mucherechedza-badza" (ply-the-hoe).

Rh., P. I have seen the Stone-Chat fairly frequently in the upper Jihu, at Maruma, and in the Chikamboge Valley, as well as throughout Northern and Southern Melsetter, but I have never yet found it in the lower Jihu. Its full song, uttered while in the air and descending to its perch, is a loud "Chwe-chwe-chwe-tseee!" (the last note clear and piping); it is apparently the first, which is often repeated many times and is rendered by the natives as "Chere-chere" &c., which has gained for this bird its somewhat fanciful native name. I have measured eighteen of these birds, ranging from 5 to 5·7 inches in the flesh and averaging 5·4; and the same number of stomachs have contained flies, a bug, beetle- and moth-larvæ, ants, two hard seeds, a small millipede, a small centipede, grasshoppers, and beetles, sometimes entire, including a Cetoniid.

119. SAXICOLA PILEATA LIVINGSTONII. Livingstone's Wheatear.

Rh. These Wheatears were particularly plentiful in mid-

September on the fresh green "burns" between the Chipetzana and Lusitu Rivers, especially on one which had only been burnt a few hours before, and were apparently in the gayest of humours as though rejoicing at this latest addition to their playground. They would soar sometimes to as high as forty or fifty feet, descending again like a Lark with outspread wings and song: "Che-che-che-che-che-tewheee-tewheee-tewheee-tewheee!" (piping notes), alighting on rocks, low bushes, and ant-heaps. Or they might be seen in all directions standing bolt upright on any prominent object, flirting their wings and calling to one another. Those near the path allowed us to pass within four or five yards without moving. They were equally common along the upper Nyahodi a few days later, and may in fact be found, in the winter, throughout Northern and Southern Melsetter, wherever the ground has been burnt. I have not noted them in the Jihu.

A male measured 6·6 inches in the flesh, and the stomach contained grasshoppers and beetles.

120. Saxicola familiaris. Familiar Chat.

Rh. I found these Chats in some numbers amongst the crags of the Chimanimani Mountains, at a height of about 6500 feet, on September 26th, securing a female, and it was probably this species which had made the cliffs ring in all directions with its song in the early morning when the mist was too dense to permit of my seeing ten yards in front of me. My specimen measured exactly six inches in the flesh; its bill was grey-brown, its irides reddish brown, and its feet black, and the stomach contained three large cockroaches, two larvæ, a large weevil (entire), and a number of termites.

121. Cossypha natalensis. Natal Robin-Chat.

Rh. I had supposed that the Natal Robin-Chat left us for the winter, and certainly I had never heard, seen, or trapped it during that season, though during the breeding-season they are common enough and come readily to traps. I was consequently surprised when, on the 18th June, one of my natives brought me a male which he had just trapped in Chirinda. Probably a few late-hatched birds stay; one still meets with young birds in completely immature plumage late in March. Last year this Robin-Chat arrived either late in September or early in October, and from that time on its pleasant "Tree-tro! Tree-tro!" was to be heard everywhere in Chirinda and Chipete. I had also good proof of its imitative powers. Odendaal was ploughing on the outskirts when he heard in the forest what he took to be a large Eagle, which sometimes sails high overhead keeping up a long-repeated modulated call, and, knowing that I required a skin, sent for my shot-gun and did all he could to find it, but without success, though the notes still went on. The imitation was certainly perfect; I noted it myself the following day at the same spot on the part of a *Cossypha* which I was watching. It would occasionally exchange its "Tree-tro" for the Eagle's whistle, which it would then usually keep up for quite a long time. Six of these birds averaged 7·32 inches in length, with a range of from 7·1 to 7·5, in the flesh. Beetles, *Celtis*-berries, driver ants (*Anomma* sp.), and a small wire-worm were amongst the contents of their stomachs.

122. Cossypha heuglini. Heuglin's Robin-Chat.

Rh., P. As well as in most parts of Southern Melsetter I have noted this Robin-Chat on the Inyamadzi and in the Nyahodi, Lusitu, and Haroni Valleys, and, in the low veld, at Chibabava, where it is fairly common, and at Gwaragwara. In the lower Jihu it is particularly plentiful, and, during my stay there in August, quite a chorus of its songs, mingled towards sunrise with the liquid calls of the various Bush-Shrikes and the warbling notes of the Sun-birds, would rise every morning from the jungle-covered slopes on either side of the stream. It is by far our finest local songster, and, to my mind, not one of our boasted English song-birds, hardly the Nightingale, is to be classed with it for a moment. It begins to sing just after the first streak of dawn appears and continues to do so for little more than half an hour, ceasing before sunrise in order to commence the day's business. During the remainder of the day it remains comparatively silent, uttering only occasionally, perhaps a few times in succession, one of its commoner flute-like notes as "Pipee-whit! pipee-whit!" with its many variations. I had the great good fortune to pitch my camp on the Kurumadzi just beside the haunt of one of these charming songsters, and I would lie awake every morning before sunrise listening to its song. It possessed a wonderful variety of notes, as even the following renderings of only a few of them may serve to indicate :—

"Poplo-plívié, poplo-plívié," repeated several times.

"Plívi-plóho, plivi-ploho, plivi-ploho, plivi!"

"Yupértruée! yupertruee! yupertruee!"

"Ho wheerdle ho whee-ho! Ho wheerdle ho whee-ho! Ho wheerdle ho whee-ho! Ho wheerdle ho whee!"

"Poppity jwin!" (three times). "Whor-ho-hee!" (repeated).

Perhaps the most striking feature of the song is that these notes are frequently accompanied by a high long-drawn "Wheee-wheee-wheee" or sometimes "Plee! heplee! heplee!" particularly at the end of the song, which usually begins low and gradually increases in volume. I at first took this to be in the nature of a duet, scarcely believing it possible that one bird could produce both sets of notes at the same time, but I have now had several opportunities of observing the bird while singing, and have little doubt that it does so.

Young birds trapped at the end of March had already nearly completed the change to adult plumage.

On the 12th December, 1906, I found a nest of this Robin three feet from the ground, in the head of a thick branching stump of "Umtalala" (*Lecaniodiscus*) overhanging the mud at the edge of the pools near Chibabava, and, with other trees, forming a dark tunnel by the meeting of their branches and the sedge. The nest was formed externally of a quantity of twigs and dry leaves loosely massed together and lined with the fine midribs of dry leaves, and measured 2·8 inches in diameter, with a cup deep in proportion (1·85 inches) and coming to rather a point at the bottom. The eggs were two, light reddish brown at first glance, though a close rexamination of one of them shews that its rather uneven colour consists of a conglomeration of fine cloudings hiding the ground-colour.

They measured 22 mm. by 16 and 15·5 respectively. The bird sat lightly, flying down into the mud directly anyone approached and thence back into the woods.

The feet of this Robin-Chat are dusky or brownish grey, in one case purplish grey. The stomachs contained, in addition to my list in the 'Ibis' for January 1907, larvæ, grasshoppers, wood-lice, ants, and berries of *Celtis* and *Antidesma*. Thirty-seven specimens averaged in the flesh 7·96 inches, varying from 7·15 to 8·8 inches in length.

123. Cossypha humeralis. White-shouldered Robin-Chat.

Rh., P. One of these rare grey-and-white Robins was brought to me on April 9th, 1906, having been trapped by one of my cattle-herds near Chirinda. It measured 6·8 inches in the flesh; bill black, feet blackish, irides dark brown. And I again saw what I took to be one of these birds in the grass-jungle bordering the Kurumadzi on August 1st of the same year.

124. Cichladusa arcuata. Morning Warbler.

P. I saw three or four of these birds, always singly, at deserted Kafir kraals when marching from the Idunda River to Umhlonhlo, on December 20th. They were in every case feeding on the ground and flew up into low trees on being disturbed. I secured one specimen (No. 1182). This species had been previously obtained on the Zambesi by Peters and Alexander.

125. Tarsiger stellatus. White-starred Bush-Robin.

Rh., P. In August I found this Robin to be very common in the dense bush of the lower Jihu, trapping several by means of Melolonthid larvæ. A number of immature birds trapped in March had already practically completed the change to adult plumage, but a winter brood is probably sometimes produced, as I have trapped a young bird in complete spotted plumage in July, and on August 10th I shot a female with its ovaries very strongly developed. On the 20th of the same month I watched one catching driver-ants (*Anomma* sp.) in company with two Flycatchers; in its movements and actions it strongly resembled the English Robin, but was perfectly silent throughout.

I again found four of these nests during the past season, one of them in a clump of *Asplenium furcatum* within a foot of a last-season's nest. In situation, construction, and materials they exactly resembled those described in the 'Ibis' for 1907 (p. 66), and the same applies both to the eggs and to the behaviour of the birds at the nest. Levaillant was therefore undoubtedly wrong in his description of the nest and eggs (*vide* W. L. Sclater, Fauna of S. A., Birds, ii. p. 219). I have examined 55 stomachs in all, which, in addition to the objects detailed in my previous paper, contained a moth, a wasp-like dipterous insect, a bug, a small coprophilous beetle, a wasp, and seeds. Beetles, however, form this bird's main food, with, when they are in season, the berries of the large forest *Celtis*. In the young bird the bill is a not very dark vandyk-brown, instead of black as in the old bird; the iris slightly darker brown; toes and tarsi also vandyk, but quite pale, the back of the tarsus, knee-joints, and toes tinged yellow; soles yellow. Thirty-five of these Robins measured in the flesh gave an average of 6·36 inches, with a variation of from 5·9 to 6·75, while a somewhat abnormally large bird measured 7·12 inches and an immature bird 5·5.

A bird trapped in Chirinda on May 28th, 1905 (No. 290), was coloured in rather a curious manner, looking as though it had lain for a long time in spirits; but as at that time numbers of these Robins were coming to my mammal-traps, and this was the only aberrant individual out of a long series taken at the same spot, I am convinced that it was a mere "sport" and not specifically distinct. Head dark grey-blue, but slightly lighter than in typical form and not extending quite so far back on to the nape. Wherever the typical bird is bright yellow this specimen is cream-colour, and the bright yellowish olive of the former's back is here replaced by ashy grey tinged with greenish. In its measurements it is much the same: culmen 0·7, wing 3·5, tail 2·54, and tarsus 1·04 inches.

126. Erithacus swynnertoni. Swynnerton's Robin.

Erithacus swynnertoni Shelley, Bull. B. O. C. xvi. p. 125; Swynn. Ibis, 1907, p. 61, pl. i.

Rh. I have never found this Robin up to the present except in the two forest-patches of Chirinda and Chipete. In common with *Tarsiger stellatus* it comes very readily to traps, and I was forced to discontinue trapping for small insectivorous mammals in the forest owing to the wholesale though unintentional destruction of these two Robins which was resulting from it. This species, too, is being tempted out of the forest by my planting-operations, and during April of this year several pairs were to be found daily working their way along the hedge-bottoms near Chirinda in search of insects, and uttering in addition to their usual note a small sibilant "si-si-si," accompanied by a frequent little flutter of the wings. Their only approach to a song, so far as I have been able to ascertain, consists of the ordinary somewhat plaintive call-note repeated several times in succession somewhat loudly.

I have again examined a large number of the nests of this Robin during the past season. Of these, two were placed in the hollows of trunks of trees, one, after the fashion of a Tree-creeper, between the woody stems of a climber and the trunk of a fair-sized *Gardenia tigrina*, and all the rest, as described already ('Ibis,' 1907, p. 61), either in Dracænas or between the suckers springing from the sides or tops of stumps, both of these situations being apparently equally popular. I have found one nest containing three eggs, the clutch consisting in all other cases of only two. In a few instances the birds were exceedingly bold and demonstrative at the nest, the female always taking the lead, but this appears to be the exception rather than the rule. The stomachs examined (37) have contained Elaterid larvæ, wood-lice, termites, beetle-larvæ, ants (including numbers of a black stinging wood-ant), grasshoppers, a bug, moth-ova, *Celtis*-berries, Geometer and other moth larvæ, small snails, a very small millipede, a somewhat large centipede (entire), and quantities of beetles. Twenty-nine of these Robins averaged 5·39 in length in the flesh, varying from 5 to 5·8 inches.

127. Erythropygia leucophrys. White-browed Ground-Robin.

P. In December, 1899, I secured one of these Robins (No. 198) in Mafusi's district at an elevation of 4000 feet.

128. Erythropygia zambesiana. Zambesi Ground-Robin.

P. I found this bird to be not uncommon in the lowlands proper, noting or obtaining specimens in December and January at Chibabava, Muchukwana, between Muchukwana and Chironda, and on the Umtefu River. They appear to prefer the denser clumps of bush in open woods and have a curious habit of every now and then flirting their tails up vertically and retaining them in that position for a few seconds while quivering the wings. My two specimens each measured 5·9 inches in the flesh; irides dark brown; upper mandible sepia, lower yellowish except point; feet light grey; a stomach contained beetles and other small insects.

129. Muscicapa cærulescens. Blue-grey Flycatcher.

Rh., P. I have on several occasions come across this Flycatcher during the past year in the neighbourhood of Chirinda. both in the open Munzhanshe woods of the northern slope and on the outskirts of the forest itself, usually single individuals, though occasionally pairs and once or twice a party of three. I also found it common in the bush on the Kurumadzi during August, keeping chiefly to the higher branches. It has a weak sibilant note and a short song, comparatively seldom heard, which is practically a short and feeble copy of that of *Batis erythrophthalma*. Four averaged in flesh 5·9 inches: iris brown; feet rather dark leaden-grey or sepia, rather duskier on toes; upper mandible black or blackish, lower pale bluish grey. Contents: large black ants, beetles, and large termites.

130. Alseonax subadustus Shelley.

Alseonax subadustus Reichenow, Vög. Afr. iv. p. 458.

Rh. During the past year, and particularly during the winter months, I have noted this Flycatcher, previously recorded only from Nyasaland, on quite a number of occasions, frequenting the open woods of Munzhanshe (*Uapaca kirkiana*) which clothe the northern and western slopes of Chirinda; and Mr. Stanley informs me that he has obtained it at Mafusi. They are usually in pairs, and call to one another with a weak sibilant note. On the 20th of August, in a cleared space on the outskirts of the forest, I watched one of these birds for some time feeding, in company with *Tarsiger stellatus* and *Trochocercus albonotatus*, on a particularly fierce and powerful species of ant (*Anomma* sp.), a column of which were crossing the patch on one of their raiding-expeditions. The birds would fly down and, hurriedly picking up two or three of the skirmishers from the flanks of the column, return to their bases in a neighbouring *Solanum* hedge or the surrounding high weeds, before the ants had time to attack them. Two specimens in my collection each measured 4·6 inches in the flesh, bill and feet black or blackish, base of lower mandible pale brown, irides dark brown. The stomachs contained small diptera and beetles, and ants.

131. CHLOROPETA NATALENSIS. Natal Yellow Flycatcher.

Rh. On July 29th I shot a female amongst the long grass near the summit of Chirinda, about 80 yards from the forest itself and near no other trees. It was perching on the grass-stems, and struck me as behaving much more like a Grass-Warbler than a Flycatcher. It measured 5·6 inches in the flesh, and the stomach contained small beetles.

132. SMITHORNIS CAPENSIS. Cape Broad-bill.

Rh., P. During the past year the Cape Broad-bill has proved to be fairly common both in Chirinda and in the wooded kloofs surrounding it, and between it and Spungabera. On the Inyamadzi I heard it calling in a spot where the ordinary trees of the open woods were growing more densely than usual. I met with it several times in the small forest-patches of the Chikamboge Valley, and at Maruma I came across it frequently, both in the forest-patch itself and in the denser bush, and even in low scrub to the east of Mr. Dierking's coffee-plantation. Finally, in the lower Jihu it is quite one of the commoner birds of the denser bush. In the low veld it was common both in the *Brachystegia* bush at Arucate and in the Madanda forests, and I also met with it on the Muzala, at Muchukwana, and at Malata. It is to a very large extent a ground-feeder, in spite of the fact that in the evenings it may often be heard calling high in the trees of Chirinda: evidence for this is that it can be trapped very readily by means of stone dead-falls baited with Melolonthid larvæ and that a somewhat large series of its stomachs which I have examined proved to contain a considerable proportion of ground-frequenting insects. I have also several times watched it keeping within five or six feet of the ground, noting on one of these occasions in my diary that "the bird kept low and mostly within two feet of the ground—it never rose to more than four feet,—now sitting perfectly still with its head down between its shoulders, now taking short flights from twig to twig and keeping the ground below it under observation, and again at intervals uttering its loud cry accompanied by the usual circular flight. Once it suddenly dropped to the ground, dashed the dry leaves to one side and the other by two or three rapid sidelong blows of its bill, and returned to its perch a foot above the ground with a fair-sized object in its mouth. This it smashed once or twice against the twig and swallowed." It is a somewhat lethargic bird, sitting still on a twig sometimes for many minutes together with only a slight upward quiver of the wings at intervals, and on the Kurumadzi a male once allowed me to pass thus only five or six feet below him, apparently trusting to his immobility to escape notice.

Its note (which is heard throughout the year) and its peculiar display are, however, the most interesting points about this Flycatcher. The former is remarkably loud for such a small bird and at a little distance strongly reminds me of one of the calls of *Turtur capicola*; not the Dove's full "ko-korrro!" but its shorter and harsher stridulous note, which is actually more frequently heard. I have seen the Flycatcher's call represented by the syllable "kroo," which gives a fair idea of it as heard at a distance; but at close quarters the spelling "karuérr!" with a strong roll throughout, more exactly represents the sound. Usually the bird is being replied to by its mate at some distance away, and on one occasion in the Chikamboge Valley I watched three birds all calling to each other. The call is invariably accompanied by a short circular flight of two or three feet in range either from left to right or *vice versâ*. This flight is usually little above the horizontal (not, as the Woodwards' account, *vide* W. L. Sclater, Fauna of S. A., Birds, ii. p. 249, would seem to imply, a vertical leap from the branch), the bird returning sometimes to the same twig, sometimes to another. When about to fly to another tree, or to make one of its call-flights, it first leans forward and pauses slightly or sometimes faces right round, immediately before making the flight. The birds call most in the morning and evening, especially the latter, keeping comparatively quiet during the hotter hours. On the Kurumadzi in the evenings one might hear their cries in every direction, not only in the denser bush but from isolated trees standing in the grass-jungle, and this would be kept up till dark. My friend Dr. Thompson, who observed one of these Flycatchers on the Inyamakunga, a stream near Chikore, lately suggested to me that the peculiar call was caused partly, if not wholly, by the vibration of the wings—so different, he observed, on these occasions to the bird's ordinary steady flight. I had the opportunity shortly afterwards of watching a pair *in flagrante delictu* for a considerable time, the female particularly at very close quarters (five or six yards). The whirr of the wings could be heard every time quite separately, the loud stridulating sound, which is all that one hears at a little distance, being made by the vocal organs. Again, in merely moving from branch to branch, the birds did occasionally vibrate their wings in the manner of their circular flight, this vibration, which is not particularly loud, being then heard alone. Nine Broad-bills averaged 5·93 inches in length in the flesh, ranging from 5·5 to 6·12. Feet dull olive-green, sometimes greyish in tone, in others yellowish; irides dark brown; bill—upper mandible black, lower pinkish white veined with purple.

Mr. G. A. K. Marshall informs me that the contents of three stomachs of this species which I sent him were as follows:—

"No. 889. 5 crickets, 1 young grasshopper (Acridian), 2 lepidopterous larvæ, 1 ant.

"No. 898. 2 green Locustids (probably living on bushes), 2 young Acridians, 2 mantises, 3 lepidopterous larvæ, 1 spider, 2 ants, 1 frog-hopper, and 2 beetles (1 wingless, *Opatrium arenarium* F.; 1 winged, family *Anthribidæ*).

"No. 899. 4 bugs, 2 frog-hoppers, 2 lepidopterous larvæ, 2 Locustids, 2 small mantises, and 1 ant."

133. PLATYSTIRA PELTATA. Green-throated Flycatcher.

P. During September of 1906 I twice saw this rare Flycatcher at Maruma, and a few days later noted a male in the dense scrub near the Chikamboge and a pair in the Inyamakuwha forest-patch in the same valley, securing the female. On first missing her the male for half an hour or more searched the forest-patch from end to end, at first remaining persistently for some time in the neighbourhood of where he had last seen her, uttering all the time a harsh "Wech-wech-wech, &c." (German "ch"), quickly repeated. Again, on November 29th, I secured a male, evidently breeding, in a large shady *Trichilia* in the Chibabava plantation, at the same shot unexpectedly killing a rare Bat.

The bill of this Flycatcher is black, the tarsi and feet (in the breeding male) grey, deepest in tone on the curiously-wrinkled toes, where it is also strongly tinged with cobalt. Irides deep purple-grey, in the Chibabava bird nearly black, with a narrow silvery ring round the pupil. The back of the eye-wattles, except the actual margin, which is bright red as in front, is dull light yellow. Length in flesh 5·5 and 5·7 inches. The three stomachs examined contained small beetles and flies.

134. BATIS ERYTHROPHTHALMA. Red-eyed Cape Flycatcher.

Batis erythrophthalma Swynnerton, Bull. B. O. C. xix. p. 109.

Rh., P. This is the *Batis dimorpha* of my recent paper in this Journal (1907, p. 69), Captain Shelley, who had then only seen the female, having referred it to that species on the strength of the colour of the iris. Actually it closely resembles *Batis capensis,* from which it appears to differ only in its smaller size and the colour of its irides, which in the male consist, as a rule, of two rings of colour—the outer, which is also usually the widest, being vermilion, and the inner orange. In the female the irides are carmine or crimson, usually slightly dusky in tone, owing to the suffusion inwards of a brown-madder ring which surrounds them, and are often separated from the pupil by a fine silvery line corresponding to the orange ring of the male. Out of a large number of specimens secured I have only once noted an iris diverging at all widely from the above. This belonged to a female shot in March of this year, and consisted of a dull grey ring surrounded by a narrow one of dull ochreous; but as the pupil was also somewhat obscured, I judged the aberrant coloration of the iris to have been due to some defective condition of the eye. The bill and feet are black. I have never found this *Batis* in the low veld proper, but it ranged from the Jihu, where I noted it in dense bush on the Zona in November, 1905, at an elevation of 2000 feet, to Northern Melsetter, where I shot a male at nearly 7000 feet in the Mt. Pene forest-patch on September 28th, 1906. It is the commonest Flycatcher of Chirinda, and may be found throughout the district in the forest-patches and densely-wooded glens, and it visits our homesteads to a larger extent than any of our other characteristic forest-birds, frequently haunting clumps or plantations of Eucalypts in pairs for days together, and visiting our orchards when the peach- or orange-trees are in bloom for the sake of the insects that are attracted to the blossoms.

I have already described the nest. There is little or no variation in the materials employed, but the lining of very fine branching stems may be either very profuse or scanty, the cup in the latter case being somewhat deeper. There are two distinct types of egg—one, which I have already described and have since again taken, with vandyk-brown markings; the other, of which I took a clutch in the

Chipete forest-patch on the 30th of October, pure white in ground-colour, with a median zone of small spots and blotches of purplish grey intermixed with pale blotches and a few darker spots of a rich reddish brown, almost brick-red, the two ends of the egg being comparatively free from spots.

During the breeding-season especially the bird is a very persistent songster, and its quaint mechanical song may be heard still going on into the evening when it is already practically dark. Both sexes sing in concert or in reply to one another, and if one should be shot the other will continue to sing for two or three minutes, more and more vehemently, until, finally alarmed by receiving no answer, it begins to search for its mate in ever-widening circles with a constantly-uttered short sibilant call. The female sits close, and when she is flushed both birds will continue to fly about the intruder in great excitement so long as he remains near the nest, always, however, keeping close to one another.

The stomachs examined have contained flies, beetles, caterpillars, and beetle-larvæ, an enormous beetle-grub, swallowed entire, once completely filling a stomach. Eight birds measured averaged 4·7 inches, varying from 4·25 to 5.

In the following figures the average is in each case taken from nineteen specimens measured:—Culmen 0·6 to 0·66 inch (type 0·65), average 0·62; wing 2·20 to 2·47 (type 2·4), average 2·35; tail 1·55 to 1·75 (type), average 1·66; tarsus 0·67 to 0·85 (type), average 0·73.

135. Batis molitor. White-flanked Flycatcher.

Rh., P. Common throughout Southern Melsetter and on the edges of the bush of the lower Jihu. I have also noted it in the upper Jihu, in the Haroni Valley, and, in the low veld, at the Umtefu River and at Inyamita. Five specimens averaged 4·63 inches in the flesh, varying from 4·4 to 5·15. The iris is usually lemon-yellow, but in a female shot on the 25th June, 1905, it was mottled over with light green and was bright yellow only immediately round the pupil. A small ichneumon-fly, a large ant, small beetles (including *Agrilus* sp.), a small wasp, a large wasp, flies, frog-hoppers, and larvæ have been contained in the stomachs examined.

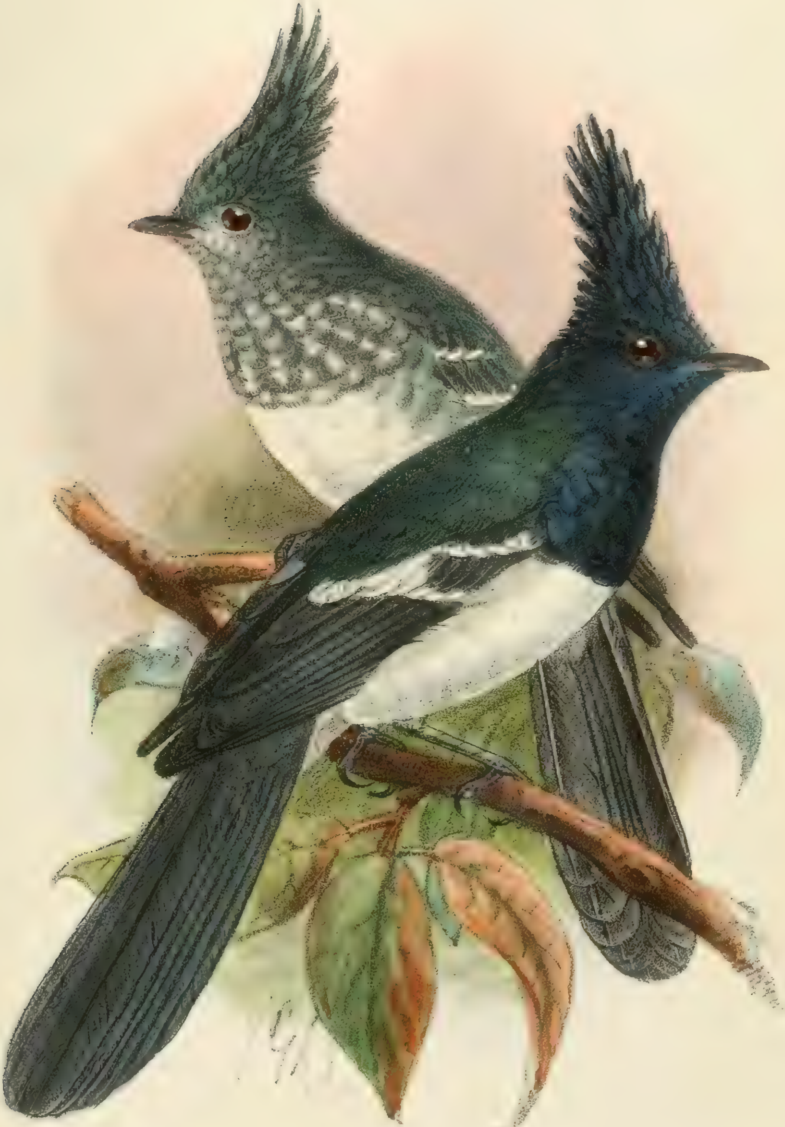
136. TROCHOCERCUS MEGALOLOPHUS. Jihu Flycatcher. (Plate II.)

Trochocercus megalolophus Swynnerton, Bull. B. O. C. xix. p. 109.

Rh., P. My first specimen of this new Flycatcher was a female, trapped by means of a stone baited with a large larva in Chirinda on June 26th. This is the only instance I have met with in the high veld proper, but during my stay on the Kurumadzi in August I found it to be fairly common in the dense bush of the lower Jihu and secured several specimens. It much resembles *T. albonotatus* in its general habits, making short flights after insects or from tree to tree and spreading its tail as a display. Its commonest call is a harsh Drongo-note (much weaker, however), repeated quickly two, three, or four times, and sometimes, but rarely, winding up with a pretty liquid note, rapidly repeated three or four times in succession. A male which I found insect-hunting at the base of a large tree was constantly uttering a little plaintive note greatly resembling that of *Erithacus swynnertoni*, for which I mistook it until I managed to locate the utterer. Though they are usually very tame, another male which I secured on August 8th shewed considerable cunning. It was continually uttering the Drongo-note, repeated twice only and without the final call, but, on seeing that it was observed, immediately became silent and kept flying off, keeping under cover the whole time with remarkable cleverness till I managed at last to get a hasty shot. The stomachs have always contained small flies.

The following is a full description of this Flycatcher :—

Adult male. Whole head, crest, throat, and chest black, heavily glossed with metallic greenish blue. Nape, lesser wing-coverts, scapulars, back, rump, upper tail-coverts, and tail ashy grey, the first two lightly glossed with metallic greenish blue. In one specimen the whole of the grey portions of the upper plumage, including the grey outer webs of the wing-quills, is yet more lightly, though quite noticeably, glossed with the same metallic shade. Lower breast, abdomen, under tail-coverts, and greater portion of



West, Newman imp

TROCHOCERCUS MEGALOLOPHUS, ♂. ♀.

flanks white. A varying number of feathers (3 to 6) in the greater wing-coverts are entirely white, forming a conspicuous alar patch, which is, however, smaller than in *Trochocercus cyanomelas.* Somewhat broad edgings to the remaining feathers of the median and upper coverts result in two parallel white lines carried forward towards the edge of the wing. Quills dusky, the outer webs edged with grey, which in the inner secondaries occupies the whole of the outer web; in most of the quills the basal half of the inner web is also edged with light grey. Secondaries very narrowly tipped, really noticeably only in the two or three inner feathers, with dull white or light grey, in one specimen only on the outer web. Under surface of the quills, both of wing and tail, grey. Under wing-coverts white, the bases and inner webs of a few of the plumes grey. Edge of wing either grey or mottled grey and white. Total length (of skin) of type specimen 5·8 inches; culmen in each of four males exactly 0·6; wing 2·65, 2·67, 2·77, and 2·75 (type) respectively; tail respectively 2·76, 2·85 (type), 2·9, and 3·1; tarsus in type 0·85, but in two others 0·63 and in the fourth 0·65.

Adult female. Differs from the male in its shorter crest (1·2 inches), which is grey like the back and but slightly washed with a steely metallic gloss; in the browner colour of the quills, particularly those of the wing; and in the almost total absence of the white alar patch. Throat and chest whitish with grey margins to the feathers, giving the whole a mottled appearance. No whitish tips to the secondaries. Culmen 0·6 inch, wing 2·55, tail 2·6, tarsus 0·77.

Eight of these birds (measured in the flesh) averaged 6·2 inches in length, varying from 5·7 to 6·6.

Bill light bluish, the forward part of the upper mandible black; feet blue-grey, with a distinct cobalt tinge; irides dark brown. In the female the upper mandible is black with only the extreme base blue, the lower grey-blue with a black tip.

This Flycatcher appears to be most nearly allied to *T. cyanomelas,* from which, however, it differs in its far longer crest (1·45 inches), the greater whiteness of its lower breast and abdomen, and the clear grey instead of greyish-brown colour of the wing-quills and tail. The metallic blue-black of the throat also comes right down on to the breast in the present species, and the secondaries have narrow dull white tips which are lacking in *T. cyanomelas.*

137. TROCHOCERCUS ALBONOTATUS. White-spotted Flycatcher.

Trochocercus albonotatus Shelley, B. Afr. i. p. 99.

Rh. I have noted this Flycatcher only in Chirinda (and Chipete), and this is, up to the present, the only locality from which it has been recorded south of the Zambesi. Its flight is frequently characterized by a purring sound. On April 3rd one of these birds was seen by Odendaal to dart out from the trees at the edge of Chirinda at a butterfly (*Mylothris*) flying past a few feet away, but to turn back on reaching it without an attempt at capture. *Mylothris* being one of our distasteful genera and at the same time possessing quite a distinctive flight, the fact that the *Trochocercus* flew at it at all seems to indicate that birds are liable to be guided as much by the mere colour as by the flight of an insect. Had it proved to be a *Belenois* it would probably have been taken.

The measurements in the flesh of two specimens in my collection were 5·12 and 5·5 inches. Bill and feet black, irides dark brown.

138. TERPSIPHONE PLUMBEICEPS. Lead-headed Paradise Flycatcher.

Tchitrea plumbeiceps Reichenow, Vög. Afr. ii. p. 510.

Chindao: at Arucate "Chinyamtambo"; on high veld "Izwezwi." Singuni: "Ive."

Rh., P. This is the common Paradise Flycatcher of both our high and low veld, none of the specimens which I have obtained up to the present being referable to the closely-allied *T. perspicillata.* In November to January I noted it in the Zinyumbo Hills (a party), on the Mwangezi, at and about Chibabava, and at Gezanye (two males together). I also observed it at Maruma, and Mr. Brent tells me that a pair frequented the trees at his homestead on the Lusitu (Northern Melsetter) throughout last season, becoming exceedingly tame and frequently using the sill of the open dining-room window as a base of operations. They would reply when called to, and became quite excited and angry when their note was wrongly imitated.

A breeding male in my collection measured 17·8 inches in the flesh and two females 7·3 and 7·15 respectively. In the female the bill is somewhat light cobalt-blue, with a black tip to the upper mandible, and the feet similar but rather duller; the eyelids are cobalt and the irides dark brown. In the live male the bill and eye-wattles are very bright cerulean-blue, assuming a more cobalt tinge a little time after death; extreme tip of upper mandible blackish. The feet are a bright blue-grey. The stomachs have contained small beetles and winged termites.

I found a nest of this Paradise Flycatcher in a secluded glen near Chirinda on Nov. 7th, 1906. It was a neat nest and occupied the small fork, about 12 feet from the ground, of a lateral twig of *Dracæna reflexa*, and was immediately overhung by the large shady bough of another tree. Externally it was composed of soft grass-blades, worked round horizontally, and of a little moss, the whole plastered over and cemented together with spider's web and ornamented with numerous pieces of pale blue-green lichen. Where the material met the supporting twig no braces were carried round the latter, but each edge was attached to the side of the twig by means of cobweb only. The lining was of finer grasses, and more especially of the fine black roots of a fern (*Pellæa hastata*) which was common in the glen. The nest, which at first sight reminded one strongly of that of *Pachyprora erythrophthalma*, was not, however, quite so scrupulously neat and compact, and was consequently weaker and more pliable. The eggs were two in number, white, with small reddish and light violet-grey spots, congregated chiefly about the larger end, and measured 20 mm. by 14.

139. Dicrurus afer. Fork-tailed Drongo.

Singuni: "Intengu" or "Induna-yezinyone" ("General of the Birds"). Chindao: "Indhenguri."

Rh., P. I frequently saw this Drongo in pairs or heard its tinny notes throughout my last low-veld journey, noting it particularly on the Umtefu River, and at Chibabava, Muchukwana, Indabila, Chironda, Inyamita, Bimba, Gezanye, and Arucate, in the last-named locality keeping to the *Brachystegia*-woods and not entering the forests. It seemed to be nowhere very plentiful, each pair probably lording it in the breeding-season over a fair-sized piece of country, and resenting intrusion by others of the same species. I have noted it once or twice in the past year in the upper Jihu, and only once in the lower (on the Kurumadzi on August 1st). It is never found in true forest or dense bush. The natives have an idea that other animals see the new moon on the day before it becomes visible to man, and state that they can themselves tell by the excited cries of the Drongo, silent or comparatively so for some days previously, when the new moon is about to appear. The three specimens which I have measured varied from 9 to 9·35 inches in length in the flesh.

140. Dicrurus ludwigi. Forest-Drongo.

Singuni: "Intengu." Chindao: "Indhenguri."

Rh., P. Although its tail is not so deeply forked as in the preceding species, "Square-tailed Drongo" is a distinct misnomer for this bird, as anyone who has observed it will agree.

I saw and heard it occasionally last August in the denser bush of the lower Jihu, and have noted it in the Maruma and Chikamboge Valley forest-patches as well as in those of Southern Melsetter. It is anything but a silent bird.

In the low veld I found it in the denser bush at Boka's, in the Idunda River forest-patch, at Inyamita, between the Idunda and Umhlonhlo, and in the Madanda forests.

Four specimens averaged 7·74 inches in length in the flesh, varying from 7·5 to 7·95.

141. **Campophaga nigra.** Black Cuckoo-Shrike.

Rh., P. Occasionally noted on the Kurumadzi in August, where, far from being shy, the males were exceedingly bold in their demeanour, perching in Drongo-like fashion high in the branches of the larger trees and conspicuous alike by their glossy blue-black sheen and the loudness of their note, which in winter is a bold "chup, chup!" uttered at frequent intervals. I have had only one opportunity of observing a female, but should her retiring behaviour on that occasion be at all characteristic of the sex in general, I should say that here is a double case of mimicry, the female being as well served by her Cuckoo-like habits and plumage as is her mate by the likeness both of his coloration and of his demeanour to those of the redoubtable "General of the Birds." At the same time I found the males to be very wary and difficult of approach, and it was only after considerable trouble that I succeeded in securing a specimen. Actually the bird is readily distinguishable, even at a distance, from *either* Drongo by the squareness of its tail. I noted it at Maruma in September, and in the same month in one of my Eucalypt plantations near Chirinda, again hearing its call in the forest several times in March and April. And in the middle of November, in travelling from my camp on the Kurumadzi to Mount Singuno, I noticed it several times sitting on prominent branches and uttering a loud mellow "Chiwu-chiwu chiwi-chiwi-chiwi-chiwi chiwu-chiwu, &c.," again bold enough in manner but unapproachable.

The length of my male in the flesh was 7·7 inches, and of the female 7·75; her feet were sepia (black in male). The stomachs contained a grasshopper and the remnants of other insects, and (of the female) nineteen small green caterpillars.

142. **Graucalus pectoralis.** Grey-throated Cuckoo-Shrike.

Rh., P. This bird when insect-hunting in the thorns or other trees always strikes me as presenting a very quaint and grandfatherly appearance, peering, as it does, in a careful and short-sighted manner at every leaf and twig. As well as at various spots in Southern Melsetter, I have noted it on the Inyamadzi, a few miles above that river's junction with the Buzi, and in August I shot a female in the thick bush on the Kurumadzi. Its cry when wounded and taken in the hand is a long, stridulous, often-repeated scream (probably its ordinary alarm-note), like that of some of the smaller Hawks, which it also resembles in its flight. In fact, it is often erroneously called by the natives "Ukozi," their general term for Hawks.

The colour of the throat is not an invariable sexual distinguishing mark, for on May 9th I shot an entirely grey-throated female, and I remember noting the same thing at Salisbury ten years ago.

Five of these birds averaged in length 9·45 inches in the flesh, maximum and minimum 8·8 and 9·9 respectively. The stomachs examined contained weevils, cockchafers and other beetles, grasshoppers, mantises, larvæ of different kinds, and locusts.

143. GRAUCALUS CÆSIUS. Grey Cuckoo-Shrike.

Rh. By no means uncommon in Chirinda, where, during the past season, I have noted quite a number, usually insect-hunting singly or in pairs in the higher branches of the larger forest-trees, and occasionally to be seen on the outskirts—once quite outside, in a neighbouring grove of Acacias. The bill and feet are black, sometimes with a plum-like bloom of the same delicate grey as the plumage; this rubs off, unfortunately, with handling. Irides deep sepia; soles pale ochreous-grey. The stomachs contained two fair-sized weevils (nearly intact), a feather (probably swallowed accidentally), larvæ (including a particularly large one, entire), a mantis, and beetles. The specimens measured varied from 9·5 to 10 inches, with an average of 9·7.

144. HIRUNDO RUSTICA. European Swallow.

Singuni: "Ikonjana," applied to all Swallows.

Rh., P. I first fell in with the English Swallow in 1906 on December 18th at Muchukwana, eighteen miles east of Chibabava. They were present in considerable numbers, hawking about and settling on the trees, and were apparently on their way inland from the coast, as I found them then scattered throughout the country as far as Beira, where numbers were to be seen perching on the telegraph-wires in the neighbourhood of the town. On my return to Chirinda on January 10th I found them there already, but they disappeared again three weeks later.

145. HIRUNDO ALBIGULARIS. White-throated Swallow.

P. I noted several of these birds in December and January in the low veld, hawking about and settling on trees and wires in company with *Hirundo rustica.*

146. HIRUNDO DIMIDIATA. Pearl-breasted Swallow.

Rh. I seem to have only once noted this formerly common Swallow during the past twelve months, namely, on March 31st, at Umlangeni's kraal on the upper Buzi, where a number were hawking over some old Kafir lands. The stomach of one in my collection contained flies and small beetles.

147. HIRUNDO ATROCÆRULEA. Blue Swallow.

Rh. This is a fairly common Swallow which has in the past frequently visited us at Chirinda, remaining usually for some weeks at a time, but I seem last year to have seen much less of it than of either *H. griseopyga* or of *Psalidoprocne orientalis.* It was with us, however, during November, in some numbers, and early in the previous month I had noted it on the Chipetzana River; while, during September, I found it to be common right through Northern Melsetter, particularly in the Nyahodi Valley and about the township itself.

A male, evidently breeding, shot on March 22nd, measured 8·5 inches; the stomach contained flies only.

This Swallow was previously supposed to be confined to Natal.

148. HIRUNDO GRISEOPYGA. Grey-rumped Swallow.

Rh., P. During the past year I have seen a great deal of this Swallow, which, rare elsewhere in South Africa, seems to occur commonly throughout Northern and Southern Melsetter, sometimes in pairs, but usually in some numbers and occasionally in company with *Psalidoprocne orientalis*. Some of the localities in which I have noted it are the neighbourhood of Chirinda, Spungabera, and the upper Jihu (in all of which contiguous localities it was particularly plentiful during June and July, and again in November); at Maruma, where I saw it daily during my week's stay there in September; all along the Nyahodi Valley later in the same month, "hawking low over the new grass and sometimes settling to feed in the road"; and on the Chipetzana in October, in company with *H. atrocærulea*. On the 16th of July, out of a number which were hawking forwards and backwards in the early morning near Mr. Ballantyne's homestead in the upper Jihu, two began descending and settling on a recently-hoed strip of ground, remaining there for a second or two, then up, and after another short round again settling, and so on. A termite-heap had been broken open at that spot, and this was doubtless the attraction. Two adult birds measured in length in the flesh 5·6 and 5·8 inches respectively, and an immature bird 4·35. Bill black, irides and feet dark vandyk-brown. Contents: numerous small flies and beetles.

149. HIRUNDO PUELLA. Smaller Striped-breasted Swallow.

Rh., P. I have not yet seen this Swallow in the Jihu, though throughout both sections of the Melsetter District it is exceedingly plentiful (I noted it particularly along the Lusitu and Nyahodi Valleys in September), while, on the Portuguese side of the border, I have found it in the Chikamboge Valley and at Spungabera. A pair were already building at my homestead last year in July and had brought out their young by the end of August, at a time when most of their companions were merely beginning to enter verandahs and houses and the sheltered crannies of exposed shale-cliffs in search of nesting-sites. In November breeding is in full swing in such places. The nest consists of a broad chamber of mud pellets thickly lined with soft grasses and other material, and is entered from the side through a tunnel of variable length, sometimes a foot or more. Occasionally it is attractively constructed of clay of as many as three different colours. On November 7th, 1906, I had just at dusk shot a *Terpsiphone,* with a view to identifying its nest, when I noted that its mate, which was continuing to call, was being answered each time from a small cliff close by by the somewhat nasal "weeping" note of a Swallow, and I found on investigating that a pair of Swallows of the present species were resting side by side in the chamber of their nest under a ledge of rock. There were no eggs.

These Swallows are always attracted by grass-fires, and the following extract from my diary for September 5th is illustrative of their usual behaviour on such occasions:—"When we commenced to burn, first two Swallows appeared, then a few more pairs, and soon an enormous flock was present—not less, I should say, than two hundred,—which, keeping more or less together, hawked up and down over and around the smoke, never venturing into the denser cloud and seeming to get plenty of insects. After a time they became slacker in their hunt and took to flying higher, amusing themselves by fluttering up against the wind time after time in a fairly compact body, being evidently by this time replete. Finally, they rose and made off, the last I saw of them being at some distance from the fire, wheeling idly about in company with a Kite at a great height in the air. They were practically all *H. puella,* but I once or twice saw a small Swallow which I took to be *H. dimidiata.*" The stomach of a female shot on this occasion contained two Coccinellidæ, a small green-winged neuropterous insect, and a frog-hopper. A few pairs of *Hirundo puella* also come to the smoke whenever I burn my seed-beds, but they at once make off on finding that no insects fly out; and this action on their part must communicate the fact to the others, for no matter how much longer the fire continues no further Swallows visit it.

During February and March of the present year the present species and *Psalidoprocne orientalis,* usually our two commonest Swallows, entirely disappeared for several weeks from the immediate neighbourhood of Chirinda, but were found meantime in considerable numbers only a few miles away on the upper Umswirizwi, where doubtless the food-supply was temporarily more abundant — shewing that apparent migration may be very local.

150. HIRUNDO MONTEIRI. Monteiro's Swallow.

P. I saw one of these fine Swallows hawking backwards and forwards over a small pool at Indabila in the low veld on December 19th, and again noted it at Zinyumbo in January.

The stomach of my specimen contained only two or three flies.

151. PSALIDOPROCNE ORIENTALIS. Eastern Rough-winged Swallow.

Rh., P. This is one of our commonest Swallows about Chirinda, and was particularly plentiful on the Kurumadzi during my visits to that river both in August and in November. It was equally abundant at Maruma, where I used to see it daily in large companies in September, and, in the same month, I noted it on the Lusitu. It seems to perch on trees to a greater extent than most other Swallows, and individuals of the flock which haunts Chipete may frequently be found settling, especially towards sunset, on the barer branches of the "Mutsawhare" (*Catha edulis*) and other trees on the edge of the forest-patch. They are very tame, permitting one to pass under the branch on which they are resting, often three or four together, either sitting meditatively till the inclination seizes them to dash forth again, or employed more usefully in preening their feathers; first one wing, then the other, goes up with a pretty flash of white to allow the bill to get at the axillaries. They may often be found hawking low over the grass at nightfall, uttering constantly two notes, a short chirp, and a "weeping" note, which is a slightly harsher and louder edition of that of *Zosterops anderssoni.* Two of the males in my collection measured respectively 5·8 and 6·25 inches in the flesh. The stomachs contained flies innumerable and small beetles.

152. Pitta longipennis. Central-African Pitta.

Pitta longipennis Reichen. Vög. Afr. ii. p. 390.

Rh., P. I saw for a second on August 8th, in the dense bush of the Kurumadzi, a bird which I took to be a Pitta. It was running away from me and I had no time for a shot, but a local native who was with me informed me that he knew it well, that it was a bird "with a red breast and black head" and the owner of a note which I was constantly hearing, a ringing "plop-plop," reminding me of what I had read of the note of the Pitta. I have also heard this call in Maruma, on Mt. Umtereni, in the Mt. Pene forest-patch, and elsewhere.

[To be continued.]

II.—*On the Ground-Dove of Porto Rico, with Notes on the other Species of* Chamæpelia. By Percy R. Lowe, B.A., M.B.O.U.

The Ground-Doves of the genus *Chamæpelia* are admitted to be a difficult subject for study, and my only excuse for offering a few remarks on them lies in the fact that I have lately been able to make personal observations as to the colour of the bill in the species inhabiting the different islands of the Antillean Subregion. Although this is, in all probability, the principal character for the separation of the various forms, it is by no means the only one, as the variations in the plumage should not be neglected.

It will be seen by the nomenclature of the various species that most of them have been considered to be forms of the *Columba passerina* of Linnæus; but this being a composite species the name *passerina* should, I think, be dropped altogether.

Linnæus apparently never saw an actual specimen of these Ground-Doves, and, moreover, by adding, as synonyms of his *Columba passerina*, the "Ground-Dove of the Carolinas" of Catesby (Nat. Hist. Carol. i. p. 26, pl. 26) and the Ground-Dove of Sloane (Nat. Hist. of Jamaica, ii. p. 305), united the

Ground-Dove of Carolina with that of Jamaica. These two forms, however, are not, in my opinion, identical. Linnæus, therefore, having left us in doubt as to the locality to which his *C. passerina* belonged, it remains to consider what names the Jamaican and the North-American birds ought to bear.

For those who wish to retain the name *passerina* of Linnæus the birds of the latter locality would appear to be best qualified to bear it; but as the question is not free from doubt it would appear better, as I have suggested, to drop the name "*passerina*" altogether and call the Jamaican bird *C. jamaicensis*, while Mr. Chapman's name *terrestris* would still be assigned to the North-American form.

I have myself lately shot and skinned a series of sixty-nine of these Ground-Doves, and the following notes are chiefly founded on specimens in my collection. For much kind help at the British Museum I once more have to thank Dr. Bowdler Sharpe and Mr. Charles Chubb.

I begin by characterizing a new form as

CHAMÆPELIA PORTORICENSIS, sp. nov.

Nine males and three females from Guanica, Puerto Rico (Feb. 1907).

The bills of this form *in the perfectly fresh state* have the base crimson and the tip varying from brownish black to black. The crimson colour occupies at least *two-thirds* of the hinder end of the bill, running abruptly up to the black tip. In this respect it differs markedly from the Cuban form *C. p. aflavida*, where we have only a faint wash of dull crimson at the extreme base, the rest of the bill being blackish. The iris varies from hazel to light stone-yellow, according to sex and age. There is a narrow edging of stone-yellow along the edges of the upper and lower lids. The wings of nine males average 80·9 mm., those of three females 79·5 mm.

In the Bahaman form (*C. bahamensis*) the bill was described by Mr. Maynard as being "constantly and wholly black," and this is one of the characters on which he established the species.

As the colour of the bill is the principal feature in the separation of the species of *Chamæpelia,* it is evident that the Porto-Rican bird must be distinct from that of the Bahamas, since the latter has no crimson at the base of the bill, and for the reasons given above the Cuban form must also be held distinct from that of Porto Rico. So far as I am aware, there is only one other form which possibly has the base of the bill crimson—*C. pallescens* from Mexico, and this is a pale member of the genus.

As regards the rest of the plumage, every Porto-Rican bird differs from the Cuban, Bahaman, and Mexican forms in being much darker brown above and of a distinctly darker and richer vinaceous tint below. The pink colour of the sides of the neck and upper wing-coverts in birds from Porto Rico is also distinctly duller and more vinaceous than in Cuban or Bahaman specimens, and this is especially noticeable in the frontal zone of pink. This darker and richer colour of both upper and under surfaces is as noticeable in the females as in the males. I have purposely compared my birds with the three forms referred to, and not with specimens from Jamaica or North America, as the latter have invariably a bright orange or yellow bill and are thus obviously distinct.

It would appear indeed as if one could roughly recognise three main forms in this genus, viz., yellow-billed, crimson-billed, and black-billed, and from notes taken on the spot I have been much struck with the fact that these colours are remarkably constant in the various localities. Herein I differ entirely from Mr. Nicoll, who states that "the coloration of the soft parts is not constant in any one island" (*cf.* 'Ibis,' 1904, p. 572). He likewise considers that Floridan specimens are inseparable from those of the West Indies.

My experience is that adult males from Florida (*C. terrestris*) have the base of the bill *invariably* bright or deep orange or orange-yellow, and that those from Porto Rico have it invariably crimson, while those from Bermuda have the bill invariably and wholly blackish brown or black, as is probably the case in the Bahaman bird. Surely the Ground-Doves from these different localities cannot be considered identical, even if these were their only points of difference.

At the present time, besides the species of *Chamæpelia* above described, nine others have been recognised. With the majority of these I am personally acquainted, having seen and shot them in the different localities. I offer the following remarks upon them.

CHAMÆPELIA TERRESTRIS.

Columba passerina Linn. Syst. Nat. i. p. 285 (1766), ex Catesby, Nat. Hist. Carolinas, vol. i. p. 26.

C. p. terrestris Chapman, Bull. Am. Mus. Nat. Hist. vol. iv. p. 292 (1892).

Seven males and two females from Charlotte Harbour, Florida (April, May, 1907).

The *adult males* have the base of the bill bright orange, the nasal prominences clear yellow, and the tip of the bill horn-coloured. Younger birds have the base of the bill bright yellow.

Adult females have the base of the bill dull reddish orange or in some cases yellow (these are probably younger birds).

In describing this form Mr. Chapman states that "the basal half or two-thirds of the bill is *coral-red*, the tip black or blackish. (In dried specimens the red becomes orange or yellow, and it is then indistinguishable from Jamaican birds) (*C. passerina*)." My notes were made immediately the birds were shot, and, as may be seen, do not agree with those of Mr. Chapman. I have not seen a "coral-red bill" in the fresh state.

As regards the plumage, this is a very easily distinguishable bird. In the male both the upper and under parts are deeper and richer in colour than in any other form. The females are mouse-coloured beneath, contrasting in a striking manner with the females of every other form.

The wings of seven males in my collection average 87·5 mm., those of two females measure 86 and 88 mm. respectively, from which it will be seen that this is probably the largest form of the genus.

CHAMÆPELIA JAMAICENSIS.

Columbigallina jamaicensis Maynard, App. Birds West Indies, 1899, p. 34.

Columba passerina Linn. Syst. Nat. i. p. 285 (1766), ex Catesby, Nat. Hist. Carolinas, vol. i. p. 26.

I have specimens of this form in my collection from Jamaica, the Cayman Islands, St Thomas, St. Kitts, Dominica, and Grenada.

The basal two-thirds of the bill of the adult male varies from bright orange to yellow according to age, that of the female is yellow. The tip of the bill varies from brownish black to black; the tarsi and feet are pale flesh-coloured.

I cannot agree to the correctness of Mr. Maynard's description of the Jamaican bird, which he compares with *C. bahamensis*, and states to be "lighter in shade." I have examined nine males and six females from Jamaica, and, on the contrary, find that in *both* sexes they are much darker above, and that the *males* are of a darker, richer, and more vinaceous tone below.

Without a much larger series of specimens from the other Lesser Antillean Islands and without careful notes taken of the soft parts in the fresh state it is impossible to be certain whether they belong to a different form from the Jamaica bird. The specimens which I have collected myself, as well as those in the National Collection, are apparently identical with the Jamaican form, and I can see no reason for separating them; this especially applies to the specimens from the Cayman Islands.

From a geographical point of view the St. Thomas Ground-Dove ought to be identical with that of Porto Rico, for the two islands rest on the same isolated submarine plateau, are connected and surrounded by the same shallow soundings, and so are probably, together with other and smaller neighbours, the isolated remnants of one large island.

CHAMÆPELIA PALLESCENS.

Chamæpelia passerina var. *pallescens* Baird, Proc. Phil. Acad. 1859, p. 305.

I have unfortunately never made notes of the soft parts of this form in the fresh state. Mr. Ridgway (Manual N. Am. Birds, p. 591) says that the wings are on an average rather longer and the bill much smaller or more slender than in *C. passerina*. The bill is "often (always in fully adult males?) red basally."

The specimens of this form that I have seen are very pale in plumage, so conspicuously so that they can easily be picked out from a collection of other forms.

This form inhabits the South-western United States (Texas to Arizona and Lower California) and south through Mexico (on both coasts) to Central America (*Ridgway*). I have only met with it near Tampico in Eastern Mexico.

CHAMÆPELIA SOCORROENSIS.

Columbigallina passerina socorroensis Ridgw. Man. N. Am. Birds, p. 586 (1887).

Chamæpelia socorroensis Salv. & Godm. Biol. Centr.-Amer., Aves, iii. p. 252 (1902).

I have never met with this form from the Socorro Islands.

CHAMÆPELIA BAHAMENSIS.

Columbigallina passerina bahamensis Mayn. Amer. Exch. & Mart, vol. iii. no. 4, p. 69 (1887).

Mr. Maynard described the Ground-Dove of the Bahamas as "similar to the Common Ground-Dove, but with the bill constantly and wholly black, and much smaller and paler."

I have examined the series of this species in the British Museum, which includes Mr. Maynard's types, and also have to thank Mr. Bonhote for allowing me to compare four specimens which he collected in the Bahamas. The bills of all the specimens appear to be wholly black, but whether there was, or was not, originally a basal cast of crimson (as in *C. aflavida*) it is difficult to say: Mr. Bonhote's specimens, which were obtained in 1904, shew no traces of it.

In both sexes the upper parts are of a pale ashy brown, while the pink coloration beneath in the males is also very pale.

Chamæpelia bermudiana.

Columbigallina passerina bermudiana Bangs & Bradlee, Auk, vol. xviii. p. 250.

Six males from the Bermudas.

Irides light hazel, with an inner ring of yellowish; eyelids edged with a narrow ring of light yellow. The bills of these birds are darker than in any other form that I have yet met with, and, even when examined in the perfectly fresh state, appear to be almost uniformly black. My experience is that, when examined very carefully on the spot, the nasal prominences are seen to be of a dull horn-colour, and the tip of the bill of a dark horn-colour or black; while the edges of the mandibles have a very narrow line of faint crimson, all the rest of the bill being black. This applies to both the adult male and the female.

In the original description the bill is described as "wholly brownish black without a trace of yellowish or orange." The irides of young birds are greyish green. The freshly moulted young male in breeding-plumage has the upper parts of a beautiful pale smoke-blue colour, very striking as the bird takes to the wing and flies away. The under parts are of a very pale uniform tint of pink. Altogether this form is the palest that I have seen, and freshly moulted specimens of it are easily recognisable. Later on the plumage becomes soiled with a ferruginous dye from contact with the peculiar soil of the Bermudas, where it is very common.

This bird has the habit of "shamming hurt" when disturbed from its nest. I have once or twice seen it fall from it like a stone and flutter along the ground in the most artful manner.

Chamæpelia insularis.

Columbigallina passerina insularis Ridgway, Pr. U.S. Nat. Mus. x. p. 574 (1887).

Two males and two females from the Cayman Islands.

Mr. Ridgway has described this bird as very similar to *C. bahamensis*, "but larger and with the basal half (or more) of the bill distinctly orange or yellowish."

Beyond the fact that the specimens which Dr. Bowdler

Sharpe and I obtained on Grand Cayman Island are slightly paler than those from Jamaica, I can see no appreciable differences, and I consider that *C. insularis* ought not to be separated from *C. jamaicensis*. It may be observed that Mr. Ridgway compares his yellow-billed bird with the black-billed Bahaman variety, instead of with the yellow-billed Jamaican form.

It may be worth pointing out that although the Cayman group of islands is geographically connected with the south-western end of Cuba by a line of shallow soundings which indicate a previous connexion, yet the bills of the Ground-Doves in the one case are yellow (basally) and in the other crimson.

CHAMÆPELIA PERPALLIDA.

Columbigallina passerina perpallida Hartert, Ibis, 1893, p. 304.

In my male specimens the basal two-thirds of the bill vary from orange and orange-yellow to yellow (according to age), the tip being nearly black. Iris reddish. Tarsi and feet very pale flesh-coloured. Females have no orange at the base of the bill. This is a well-marked and constant form. It is uniformly paler both above and beneath than *C. jamaicensis* from Jamaica. The pale coloration is especially striking in a series of nine females that I have collected, in which the abdomen is creamy white. The wings of five males in my collection average 79 mm., and those of nine females 76 mm.

Dr. Hartert described this form from the Islands of Curaçoa, Bonaire, and Aruba, and I have lately found it in Blanquilla, the Los Hermanos group of islands, and Margarita. It is probable indeed that it is resident in all the islands along the northern coast of Venezuela and Colombia, as well as in the arid coast-districts of this littoral.

CHAMÆPELIA AXANTHA.

Columbigallina passerina aflavida Palmer & Riley, Proc. Biol. Soc. Wash. vol. xiii.–xv., March 5th, 1902.

Four males from Havana, and three females from Matanzas, Cuba.

The bills of my specimens were brownish black, becoming quite black at the tip, and having the extreme base washed with crimson. Along the edges of the mandibles is a narrow line of crimson, lighter than that at the base. As Mr. Chapman remarks, "the general appearance of the bill is black." I have never seen a trace of yellow or orange in either male or female. The wings of my four males average 85·8 mm., and those of the females 84·5 mm.

Cuban specimens are slightly larger than those from the Bahamas, which have not as yet been described as having any crimson wash at the base of the bill, otherwise there can be little difference between them. I notice, however, that in the Cuban specimens in the British Museum and in my own collection the birds are slightly duller above and beneath than those from the Bahamas.

For the name *aflavida,* which is a compound of Greek and Latin, I propose to substitute that of *axantha.*

CHAMÆPELIA EXIGUA.

Columbigallina passerina exigua Riley, Proc. U.S. Nat. Mus. xxix. p. 171 (1905).

Hab. Mona Island, Puerto Rico, W.I.

I have never seen specimens of *Chamæpelia* from this island, which is thirty-eight miles from the mainland (Porto Rico)—lying between it and S. Domingo. Mr. Riley describes the colour of the bill as wholly black, and compares the form with *C. bahamensis* and *C. perpallida.* It differs, he says, from the Bahaman bird in being smaller and much paler above and below, and from *C. p. perpallida* "in its paler coloration and wholly black bill." The female is said to be similar to that of *C. bahamensis*, but smaller.

It may be remarked that Mr. Riley compares his bird with that of the Bahamas, which belongs to the black-billed race, and also with the Venezuelan form (*C. perpallida*), which belongs to the yellow-billed group. Since his bird has the bill wholly black it would have been better to have compared it with the Bermudan (black-billed) as well as with the Bahaman form.

III.—*Remarks on a Collection of Birds from the Sikhim Himalayas.* By P. L. Sclater, D.Sc., F.R.S.

During a visit to Glasgow in September last I had the pleasure of inspecting (under the kind guidance of Prof. Graham Kerr) the fine collection of the birds of Sikhim made by Col. L. A. Waddell, C.B., and presented by him to the Hunterian Museum of the University in 1893. There are about 1600 specimens in the collection, all in good order. They have been described in a paper written by Col. Waddell, and published in 'The Gazetteer of Sikhim' of 1894 *, of which Col. Waddell has kindly sent me a copy. I was not previously acquainted with the existence of this memoir, which is of much interest. After preliminary remarks on previous authorities on the birds of Sikhim, Col. Waddell describes the climate and conformation of the country, which he says may be viewed as "a stupendous stairway, leading from the western border of the Tibetan plateau down to the plains of Bengal with a fall of about 17,000 feet in 150 miles." He then proceeds to give a tabular list of the species (about 450 in all), with their scientific and vernacular names and their exact localities and altitudes in the Sikhim Himalayas.

In conclusion, he adds field-notes on about 100 of the species contained in the previous list, amongst which are many of considerable interest.

Col. Waddell, in a letter, tells me that the specimens in his collection have never been examined by an expert in Indian ornithology, and that he would be much pleased to supply any further information he may have to anyone who would undertake to re-examine the specimens and revise the List.

A few of them, however, were referred to the British Museum in 1894, and among these Mr. Ogilvie-Grant found a specimen of a new species of *Garrulax*, which he named *Garrulax waddelli* (see Bull. B. O. C. iii. p. xxix, 1894).

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* "A List of Sikhim Birds, showing their Geographical Distribution." By L. A. Waddell, F.L.S. Gaz. of Sikhim, 1894, p. 198.

I need hardly remind our readers that Col. Waddell, who was the Chief of the Medical Service in the Tibetan Expedition of 1904, made a collection of birds on that occasion. This was unfortunately lost on the return march from Lhasa, except a few specimens which were examined by Mr. Dresser and described by him[*].

IV.—*On further Collections of Birds from the Efulen District of Camaroon, West Africa.* By R. BOWDLER SHARPE, LL.D. *With Notes by the Collector,* G. L. BATES.—Part V.[†]

(Plate III.)

SEVERAL consignments of birds have reached the British Museum from Mr. Bates, and I have in the present paper carried on my description of the collection to the *Timeliidæ* and *Turdidæ*.

As before, Mr. Bates's original notes are signed with his initials, and placed between square brackets [ ].

205. MACROSPHENUS FLAVICANS.

Macrosphenus flavicans Cass.; Reichenow, Vög. Afrikas, iii. p. 615 (1905).

a. ♀ ad. Efulen, Dec. 12, 1902.

No. 391. ♀ imm. Efulen, March 24, 1904.

No. 1089. ♂ ad. Zima Country, Oct. 8, 1905.

No. 2508. ♂ ad. Bitye, River Ja. May 10, 1907.

No. 391 seems to me to be a young bird, as it has the throat greenish yellow, a little paler than the under-surface. I would suggest that *M. zenkeri* of Reichenow may be the young of *M. flavicans*.

206. TURDINUS BATESI.

Turdinus batesi Sharpe; id. Ibis, 1902, p. 94, pl. iv. fig. 2; id. Hand-l. B. iv. p. 34 (1903).

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[*] P. Z. S. 1905, pt. i. p. 54 (Jan. 1905).

[†] *Cf.* for previous papers: Sharpe, 'Ibis,' 1904, pp. 88, 591; 'Ibis,' 1905, p. 461; Bates, 'Ibis,' 1905, p. 89; Sharpe, 'Ibis,' 1907, p. 416.

Alethe batesi Reichenow, Vög. Afrikas, iii. p. 749 (1905).

a. ♂ ad. Efulen, March 27, 1902. "Mvahume-bijak."

b. ♀ ad. „ April 1, 1902.

c. Ad. „ March 23, 1903.

No. 28. ♂ ad. River Ja, Jan. 1903.

Nos. 224, 238. ♂ ad. Efulen, Nov. 3–9, 1903.

Nos. 268, 283, 292. ♂. River Ja, Dec. 16, 19, 21, 1903. "Akalat."

Nos. 491, 509, 564, 568, 575, 605. ♂ ♀ ad. River Ja, May 14–31, 1904.

Nos. 612, 634, 647, 664, 670, 721. ♂ ♀ ad. River Ja, June 2–24, 1904.

Nos. 1030, 1057. ♀; 1063. ♂ ad. Efulen, Aug. 10–17, 1905.

No. 1278. ♂ imm. River Ja, Jan. 9, 1906. Testes very small.

No. 1460. ♂ ad. River Ja, Feb. 24, 1906.

Nos. 1548, 1552, 1553. ♀. River Ja, March 14, 15, 1906.

The sexes seem to be perfectly alike in colour.

Nos. 1713, 1736, 1751. ♂ ad. River Ja, June 3–12, 1906.

Nos. 1740, 1743, 1758, 1783, 1790. ♀ ad. River Ja, June 10–22, 1906. Ovaries granular and small.

No. 1913. ♀ ad. River Ja, Aug. 13, 1906. Small ova in ovaries.

Nos. 1949, 1964. ♂ ad. 25 miles from Kribi, Sept. 20, 22, 1906. Testes very large and of medium size.

Nos. 2017, 2024. ♂ ♀ ad. Bitye, River Ja, Oct. 29, 30, 1906.

Nos. 2157, 2207. ♀ ♂ imm. Bitye, River Ja, Jan. 12, 27, 1907.

Nos. 2326, 2343. ♀ imm., ♂ ad. Bitye, River Ja, March 9, 1907.

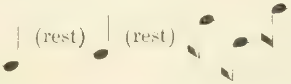
Nos. 2442, 2459. ♀ ad.; 2458. ♂ ad. Bitye, River Ja, April 12–15, 1907.

Nos. 2540, 2543. ♂ ♀ ad. Between Kribi and Efulen, June 19, 20, 1907.

Nos. 2580, 2641. ♂ ad. Between Kribi and Efulen, July 1, 17, 1907.

[The little members of the genus *Turdinus*, which are called in Fang and Bulu "Akalat," are among the most secretive of birds, keeping to the dark thickets of the forest. If I had depended upon shooting, I should have got but few specimens. But these birds seem to have a peculiar aptitude for getting hung up by the legs in snares set by the native boys, both in those baited with termites strewn on the ground, and in those set over little streams in places where the birds are accustomed to bathe in the afternoon. *T. batesi* seems to be the commonest species at the Ja, though at Efulen it was not so often obtained as the others.

No. 1460, the only male I ever shot, was first seen in the thick tree-tops, uttering its song, about seven o'clock in the morning. The song was in a clear, sweet but plaintive, whistling tone. The notes varied much in pitch, as is shown here, no attempt being made to give the intervals exactly, as I am no musician, but only to shew that the first note is very low and the last very high:—



This song was repeated constantly in just the same manner and became monotonous. The bird accompanied its singing by spreading its wings. The sex-organs were found to be very large.—G. L. B.]

207. TURDINUS CERVINIVENTRIS.

Turdinus cerviniventris Sharpe, Bull. B. O. C. xii. p. 3 (1901); id. Hand-l. B. iv. p. 33 (1903).

Turdinus fulvescens (part.) Reichenow, Vög. Afrikas, iii. p. 736 (1905).

No. 309. ♂ ad. River Ja, Dec. 27, 1903. "Akalat."
Nos. 380, 381. ♂ ♀ ad. Efulen, March 21, 1904.
No. 429. ♂ ad. Efulen, April 6, 1904.
Nos. 527, 592. ♂ ad. River Ja, May 18, 27, 1904.
Nos. 626, 675. ♂ ad. ,, June 5, 13, 1904.

No. 903. ♀ ad. Efulen, July 14, 1905.

Nos. 1134. ♂. Zima Country, Oct. 14, 1905.

Nos. 1228, 1270. ♀ imm., ♂ ad. River Ja, Jan. 2, 8, 1906.

No. 1607. ♂ ad. River Ja, March 26, 1906. Testes very large.

The majority of the specimens have the wings olive and a little darker than the back; but No. 381 has rufous quills, and No. 592 is moulting from a rufous wing into the olive-coloured plumage, shewing beyond a doubt that the rufous wing is a sign of immaturity.

No. 1692. Ad. River Ja, May 1906.

Nos. 1710, 1772. ♂ ad. River Ja, June 2, 16, 1906. Testes very large.

No. 2019. ♂ ad. Bitye, River Ja, Oct. 29, 1906. Testes rather large.

No. 2082. ♂ ad. Bitye, River Ja, Nov. 19, 1906. Testes small.

Nos. 2451, 2460. ♂ ad. Bitye, River Ja, April 13, 15, 1907. Testes large.

No. 2518. ♀ ad. Bitye, River Ja, May 19, 1907. Ovary granular.

208. TURDINUS FULVESCENS.

Turdinus fulvescens (Cass.); Reichenow, Vög. Afrikas, iii. p. 736 (1905).

a. ♂ ad. Efulen, Nov. 18, 1901.
b. ♀ ad. „ Feb. 20, 1902. "Akalat."
c. ♂ ad. „ Dec. 31, 1902.
No. 221. ♂ ad. Efulen, Nov. 2, 1903.
d. Juv. Efulen, April 2, 1903.
Nos. 398, 399. ♂ ad. Efulen, March 25, 26, 1904.
No. 427. ♂ ad. Efulen, April 5, 1904.
No. 721. ♂ ad. River Ja, June 24, 1904.
No. 759. ♂ ad. Efulen, June 12, 1905.
Nos. 944, 945. ♂ ♀ ad. Efulen, July 21, 1905.
No. 971. ♂ ad. Efulen, July 27, 1905.
Nos. 1027, 1035. ♀. Efulen, August 10, 11, 1905.

No. 1438. ♂ ad. River Ja, Feb. 18, 1906.
No. 1546. ♂ ad. „ March 14, 1906.
No. 1766. ♀ ad. „ June 14, 1906.

Nos. 1951, 1954, 1957, 1958. ♂ ad. 25 miles from Kribi, Sept. 20, 1906. Testes large.

No. 2018. ♂ ad. Bitye, River Ja, Oct. 29, 1906. Testes large.

No. 2214. ♂ ad. Bitye, River Ja, Jan. 28, 1907. Testes large.

No. 2360. ♀ ad. Bitye, River Ja, March 19, 1907. Ovary granular.

Nos. 2520, 2522. ♂ ad. Bitye, River Ja, May 19, 20, 1907.

Nos. 2547, 2553. ♂ ad. et ♀ imm. Between Kribi and Efulen, June 20, 21, 1907. Testes very large.

Nos. 2581, 2582. ♂ ♀ ad. Between Kribi and Efulen, July 2, 1907.

I quite agree with Mr. Boyd Alexander that *T. rufipennis* is the young of *T. rufescens,* and I regret that I separated the two forms in the 'Hand-list of Birds.' He has also united *T. albipectus* of Reichenow, but I am not quite convinced of the identity of the latter species, as some of the specimens are very much more white on the breast, with more rufous upper and under tail-coverts.

[A plaintive, monotonous, whistling song (consisting of only two or three notes instead of the five described above, but, like them, varying greatly in pitch), I have good reason to believe, is made by one or both the above species, which are much alike. But I have as yet tried in vain to see the bird which uttered these notes.—G. L. B.]

209. Turdinus albipectus.

Turdinus albipectus Reichenow; id. Vög. Afrikas, iii. p. 738, cum tab. (1905).

a, b. ♀ ad. Efulen, April 20, 1901.
c. ♂ ad. Efulen, Nov. 18, 1901.
Nos. 134, 138. ♂ ♀ ad. Efulen, April 20, 1903.

210. Bathmedonia rufa.

Bathmocercus rufus Reichenow, J. f. O. 1896, p. 43, Taf. iii.

Bathmocercus fuscipennis Sharpe, Bull. B. O. C. xiv. p. 19 (1903).

Bathmedonia rufa Reichenow, Vög. Afrikas, iii. p. 742 (1905).

Nos. 459. ♂; 460, 461. ♀ ad. River Ja, March 1904. Testes of male rather large.

No. 558. ♂. River Ja, May 23, 1904.

No. 567. ♀. „ May 24, 1904.

No. 590. ♀. „ May 27, 1904. Eggs forming.

No. 982. ♀. Efulen, July 22, 1905.

No. 1034. ♀. „ Aug. 11, 1905.

No. 1217. ♀ ad. River Ja, Dec. 31, 1905. Eggs beginning to form.

No. 1299. ♀ ad. River Ja, Jan. 13, 1906.

No. 1600. ♂ ad. „ March 24, 1906.

No. 1678. ♀ ad. „ April 15, 1906. Eggs beginning to form.

Nos. 1695, 1696. ♂ ♀ ad. River Ja, May 1906.

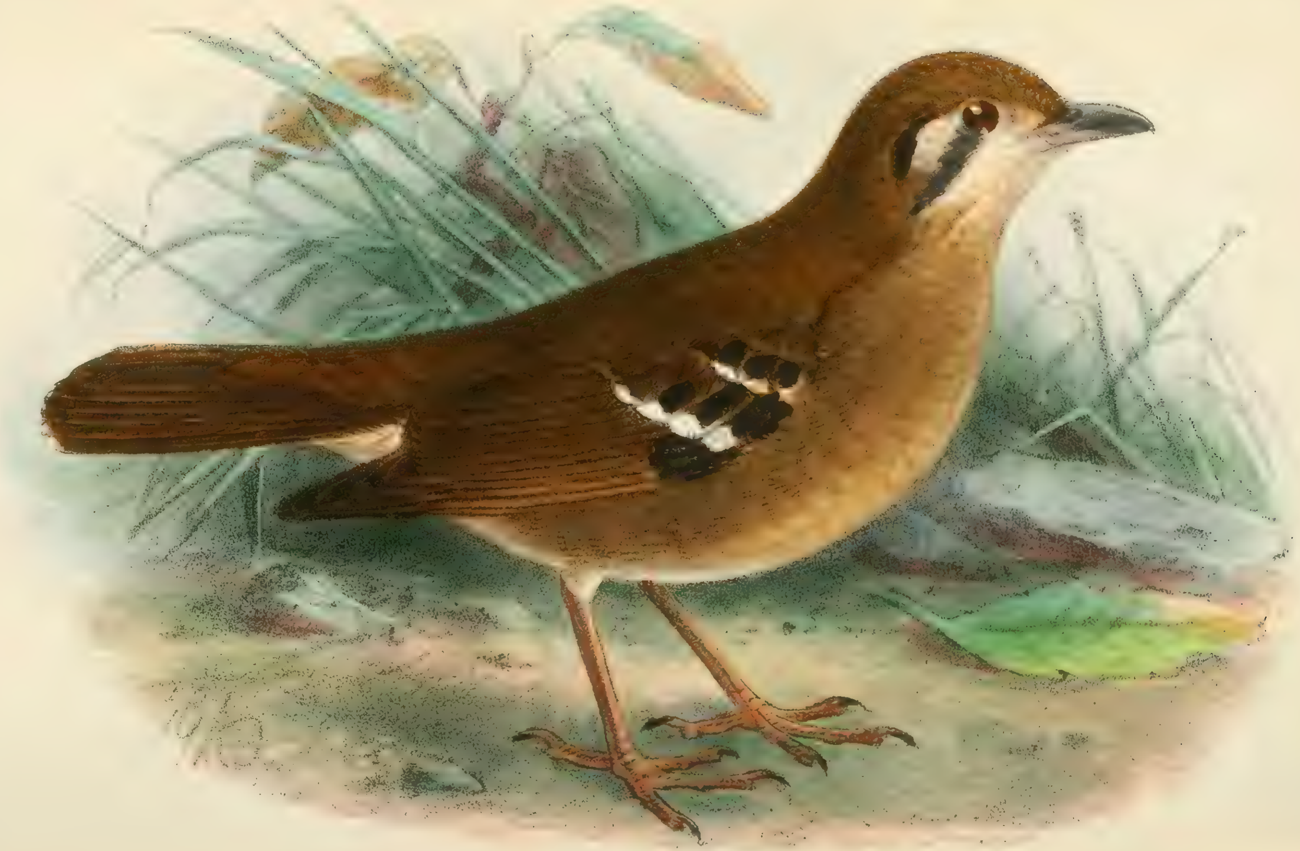
Nos. 1731, 1734. ♀ ad.; 1732, 1747, 1779. ♂ ad. River Ja, June 8–19, 1906.

No. 2001. ♀ ad. Bitye, River Ja, Oct. 25, 1906.

Nos. 2098, 2099. ♂ ♀ ad. Bitye, River Ja, Nov. 28, 1906.

No. 2376. ♂ ad. Bitye, River Ja, March 23, 1907. Testes rather large.

The type of my *B. fuscipennis* turns out to be a young male of this species emerging from the dusky (or female) plumage into the rufous dress of the male. The characters of *B. fuscipennis* are those of the immature male. The difference in colour between the sexes is remarkable, and the male is chestnut, with a black forehead and throat and grey abdomen, as figured by Dr. Reichenow. The female, however, is blackish above with an olive wash, the forehead, sides of face, and throat black; the chest and remainder of the under surface are of a dingy ash-colour with an olive shade.



West, Newman imp

GEOCICHLA BATESI.

211. GEOCICHLA CAMERONENSIS.

Geocichla cameronensis Sharpe, Ibis, 1905, p. 472.

No. 773. ♂ pull. Efulen, June 13, 1905. Testes very small.

Nos. 2624. ♂ juv.; 2629. ♀ ad. Between Kribi and Efulen, July 13, 15, 1907. ♂. Feet whitish; iris dark brown.

The nestling bird very closely resembles the type specimen, but has black margins to some of the feathers of the under surface.

In his last collection Mr. Bates has sent an adult female and an immature male, which agree with the original type. The younger bird has the crown deep chestnut with paler shaft-streaks on the head and upper mantle.

212. GEOCICHLA BATESI. (Plate III.)

Geocichla batesi Sharpe, Bull. B. O. C. xvi. p. 36 (1905).

No. 957. ♂ ad. Efulen, July 25, 1905.

Nos. 2633, 2634. ♂ ♀ ad. Between Kribi and Efulen, July 16, 1907. ♀. Feet whitish; iris brown.

The discovery of this new species of *Geocichla* is very remarkable, for already from Camaroon two species have been described, *G. crossleyi* and *G. cameronensis*, and the former is still represented only by the typical specimen in the British Museum. *G. compsonota* was described by Cassin from Gaboon, and the unique type is in Philadelphia; the species has never been rediscovered, and I was in hopes that Mr. Bates had at last succeeded in finding it. It is evident, however, that the Efulen bird is distinct, as it has not the under surface "white" and the chin "dark cinereous," nor are the upper parts "dark rufous."

G. batesi is closely allied to *G. princei* from the Gold Coast, but is lighter rufous above, with the head and neck tinged with olivaceous, and the greater wing-coverts are black, with white spots at the ends; the primary-coverts are entirely black. The facial markings are similar in the two species, but the chest and sides of the body of *G. batesi* are more ashy brown than in *G. princei*, and not so rufescent as in that species.

213. MERULA SATURATA.

Merula saturata (Cab.); Sharpe, Hand-l. B. iv. p. 128 (1903).

Turdus pelios saturatus Reichenow, Vög. Afrikas, iii. p. 691 (1905).

Nos. 1245, 1339. ♂ ad. River Ja, Jan. 4, 22, 1906.

No. 1591. ♂ ad. River Ja, March 22, 1906. Testes very large.

No. 2350. ♀ ad. Bitye, River Ja, March 17, 1907. Small ova in ovary.

No. 2499. ♀ ad. Bitye, River Ja, May 7, 1907.

214. COSSYPHA MELANONOTA.

Cossypha melanonota (Cab.); Sharpe. Cat. B. vii. p. 46 (1881); id. Hand-l. B. iv. p. 165 (1903).

Cossypha verticalis melanonota Reichenow, Vög. Afrikas, iii. p. 762.

Nos. 519, 523. ♂ ad.; 520. ♀ ad. River Ja, May 17, 18, 1904.

Nos. 673, 680, 687. ♀ ad. River Ja, June 13, 15, 1904.

No. 1554. ♂ ad. River Ja, March 15, 1906.
No. 1652. ♂ ad. ,, April 4, 1906.
No. 1676. ♂ ad. ,, April 14, 1906.
No. 1726. ♂ ad. ,, June 8, 1906.
No. 1897. ♀ ad. ,, Aug. 9, 1906.

Nos. 2031. ♂; 2032. ♀; 2049. ♂ ad. Bitye, River Ja, Nov. 5, 1906.

No. 2139. ♀ ad. Bitye, River Ja, Jan. 8, 1907.

Apparently this series should all be referred to *C. melanonota,* and not to *C. verticalis,* but there is considerable variation in the colour of the back, some specimens being quite black above, while others have a bluish-grey shade. I find that a similar variation takes place among birds from the Gold Coast; and it would appear that *C. melanonota* is not very distinct from *C. verticalis,* for the black back occurs in a series of both of them in the British Museum. The males and females both vary slightly in length of wing, which measures 3·7–4·2 inches.

215. COSSYPHA CYANOCAMPTER.

Cossypha cyanocampter (Bonap.); Sharpe, Hand-l. B. iv. p. 163 (1903); id. Ibis, 1905, p. 474; Reichenow, Vög. Afrikas, p. 757.

Nos. 1186, 1214, 1215, 1219, 1223. ♂ ♀ ad. et imm. River Ja, Dec. 24–31, 1905.

Nos. 1712, 1720. ♂ ♀ ad. River Ja, June 1906.

Nos. 2372, 2373. ♂ ♀ ad. Bitye, River Ja, March 22, 1907.

The adult female is exactly like the adult male, but a young female is much paler below, and has pale sandy-buff spots on the crown and wing-coverts.

The female is proportionately smaller than the male, as is seen by the following measurements:—

Male. Wing 3·45 to 3·65 inches, culmen 0·8 to 0·85, tail 3·1 to 3·3, tarsus 1·2.

Female. Wing 3·1 to 3·3 inches, culmen 0·75, tail 2·7 to 2·8, tarsus 1·05.

The specimens obtained from November to March are browner on the back than those killed in June and July.

216. NEOCOSSYPHUS RUFUS.

Neocossyphus rufus (Fischer & Reichenow); Reichenow, Vög. Afrikas, iii. p. 676 (1905).

Nos. 1093, 1128. ♀ ad. Zima Country, Oct. 8, 13, 1905.

No. 1724. ♂ ad. River Ja, June 6, 1906.

There are some slight differences between these specimens and Professor Reichenow's description and figure in the 'Vögel Afrikas.' I do not like to describe the Camaroon birds as new, as I have not been able to compare them with East African specimens.

[These birds were said by the men who shot them to have been found in the forest, on or near the ground, like *Neocossyphus poensis.* The stomach contained fragments of insects, in one case grasshoppers or crickets.—G. L. B.]

217. NEOCOSSYPHUS POENSIS.

Neocossyphus poensis (Strickl.); Sharpe, Ibis, 1905, p. 475; Reichenow, Vög. Afrikas, iii. p. 676.

Nos. 1165, 1205. ♂; 1189. ♀ ad. River Ja, Dec. 19–25, 1905.

Nos. 1741, 1742. ♂ ad.; 1804. ♀ imm. River Ja, June 10–26, 1906.

No. 1905. ♂ ad. River Ja, Aug. 10, 1906.

Nos. 1948, 1955. ♂ ♀. 25 miles from Kribi, Sept. 20, 1906.

No. 2115. ♀. Bitye, River Ja, Dec. 4, 1906.

Nos. 2252, 2257. ♀ ad. Bitye, Feb. 10, 11, 1907. Ovary small.

Nos. 2470, 2492. ♀ ad. Bitye, April, 17, 25, 1907.

Nos. 2544. ♀; 2597. ♂ ad. Between Kribi and Efulen, June 20 and July 5, 1907.

218. ALETHE ALEXANDRI.

Alethe alexandri Sharpe, Bull. B. O. C. xii. p. 4 (1901); id. Ibis, 1902, p. 94; id. Hand-l. B. iv. p. 168 (1903).

Alethe poliocephala Bp.; Reichenow, Vög. Afrikas, iii. p. 746 (1905).

a. ♀ juv. Efulen, April 24, 1902.
b, *c*. ♂ ♀ ad. Efulen, Dec. 31, 1902. "Akalat."
d. ♂ juv. „ Jan. 1, 1903.
No. 155. ♂ ad. „ May 7, 1903.
No. 220. ♀ ad. „ Nov. 3, 1903.
No. 318. ♂ ad. River Ja, Dec. 29, 1903.
Nos. 627, 628. ♂ ♀ ad. River Ja, June 5, 1904.
No. 643. ♀ ad. River Ja, June 8, 1904.
Nos. 949. ♂; 952, 958. ♀ ad. River Ja, July 22–25, 1905.
No. 1195. Juv. River Ja, Dec. 26, 1905.

Nos. 1206. ♂ ad.; 1225. ♂ juv. River Ja, Jan. 1–14, 1906.

Nos. 1746, 1767, 1768, 1773. ♂ ♀ ad. et imm. River Ja, June 11–16, 1906.

No. 1822. ♀ ad. River Ja, July 1, 1906.
No. 2016. ♀ ad. Bitye, River Ja, Oct. 29, 1906.
No. 2116. ♂ ad. „ „ Dec. 4, 1906.
No. 2228. ♂ ad. „ „ Jan. 29, 1907.
No. 2285. ♂ ad. „ „ Feb. 22, 1907.

No. 2348. ♂ ad. Bitye, River Ja, March 16, 1907.
No. 2491. ♀ ad. „ „ April 25, 1907.
Nos. 2615, 2641. ♂ ad. Between Kribi and Efulen, July 11, 18, 1907.

The immature birds have the tips of the greater wing-coverts and innermost secondaries bright chestnut; the breast, abdomen, and under tail-coverts are also more fulvous.

I find that the character of the black face is well sustained in the above-mentioned series, and that the species is quite easily distinguished. At the same time I think it extremely probable that Dr. Reichenow's *Callene hypoleuca* is the young of *Alethe alexandri*, in which case the former name will have priority, and the species will have to be called *Alethe hypoleuca* (Reichenow).

An immature bird in the Museum from Camaroon (*Crossley*: spec. *c* of the 'Catalogue of Birds,' vol. vii. p. 58, s. n. *A. castanea*) is really the young of *A. alexandri.*

[All my specimens have been trapped on the ground in the forest. The bird feeds on insects, such as are found on the ground.—G. L. B.]

219. ALETHE CASTANEA.

Alethe castanea (Cass.); Sharpe, Ibis, 1902, p. 94; id. Hand-l. B. iv. p. 168 (1903); Reichenow, Vög. Afrikas, iii. p. 747 (1905).

No. 356. ♂ ad. Como River, 60 miles from Gaboon, July 22, 1896.
a. ♂ ad. Como River, July 11, 1896.
b. ♂ juv. Batanga, Dec. 5, 1901.
c. ♀ ad. Benito River, French Congo, Feb. 15, 1901. "Nzok ntyon."
d. ♀ ad. Efulen, Nov. 18, 1901.
e. ♀ ad. „ March 25, 1902.
No. 122. ♂ juv. Efulen, April 10, 1903.
No. 151. ♀ ad. „ May 6, 1903.
No. 388. ♀ juv. „ March 24, 1904.
No. 355. ♀ juv. „ Nov. 15, 1904.

No. 550. ♀ imm. River Ja, May 21, 1902.

Nos. 42, 48. ♀ ad. „ Feb. 1903.

Nos. 278. ♂ ad.; 279. ♀ juv. River Ja, Dec. 18, 1903.

No. 582. ♂ ♀ ad. River Ja, May 26–31, 1904.

Nos. 746, 747. ♂ ad. et juv. River Ja, June 8, 1905.

No. 861. ♀ ad. River Ja, July 8, 1905.

Nos. 928, 929. ♀ ad. et imm. River Ja, July 18, 1905.

Nos. 1251, 1268. ♀ ad. et imm. River Ja, Jan. 5, 8, 1906.

Nos. 1533, 1599. ♂ ♀ ad. River Ja, March 10, 24, 1906.

No. 1195. Juv. River Ja, Dec. 26, 1905.

Nos. 1221. ♂ juv.; 1222. ♂ ad. River Ja, Dec. 31, 1905.

No. 1722. Ad. River Ja, June 5, 1906.

Nos. 1940. ♀; 1953. ♂ ad. 25 miles from Kribi, Sept. 18, 20, 1906.

No. 2224. ♂ ad. Bitye, River Ja, Jan. 29, 1907.

Nos. 2265. ♂ juv.; 2269, 2270. ♂ ad.; 2294. ♀ ad. Bitye, River Ja, Feb. 17–25, 1907.

Nos. 2413, 2434. ♂; 2469. ♀ ad. Bitye, River Ja, April 1–17, 1907.

Nos. 2562, 2576, 2586, 2589. ♀ ad. et juv. Between Kribi and Efulen, June 25 to July 3, 1907.

No. 2601. ♂ ad. Between Kribi and Efulen, July 6, 1907.

The young birds are spangled on the back with black and orange-rufous, the dorsal feathers being black with a central ovate spot of rufous.

[This is another secretive forest bird; it would not be supposed to be so common, were not so many snared. Birds of this species may often be seen, however, by watching in thickets where an army of driver-ants covers the ground and bushes, as they are very fond of feeding on these ants, though they do not come out into open places to do so. It is remarkable how many of the individuals of this species that I have seen, both alive and dead, had the spotted plumage of young birds. The large proportion of spotted birds seems to shew that this plumage is kept for a long time.

This bird utters a plaintive tremulous whistle, which the natives articulate as "mbofio," with the last vowel prolonged. This is one of the commonest sounds of the dark, lonely forest.—G. L. B.]

V.—*Ornithological Notes from Japan.*

By Collingwood Ingram, M.B.O.U.

(Plate IV.)

I. Introduction.

The observations incorporated in the following paper are the outcome of my second visit to Japan, in the early summer of 1907. Reaching Nagasaki on April 20th of that year, I at once hastened to the capital, where I wished to apply to the government as soon as possible for a special permit to collect birds—the legitimate shooting-season having been already closed, on April 15th. But it was only after three weeks of tedious correspondence and many lengthy interviews that the necessary permission was granted, an unforeseen delay that prevented me from doing any real work until the second week of May. Although poaching and illicit shooting are rampant almost everywhere in Japan, a permit is quite needful for the foreign collector, whose movements, especially in the country districts, are naturally followed by the inhabitants with curious interest.

After spending a week or so in the vicinity of Kioto and Nikko I ultimately left Tokio for the slopes of Fujiyama on May 14th. At the recommendation of Mr. Owston the village of Subashiri, on the eastern slope of that mountain, was chosen as my head-quarters. In this neighbourhood I stayed for nearly three weeks and with the able assistance of one, and sometimes two or more Japanese collectors, worked the country very carefully for a radius of some eight or nine miles round the village, at times reaching elevations of 5000 ft. or even more. However, it was still too early in the season for these higher districts, and I found that better results were obtained by remaining in the neighbourhood of Subashiri itself, which, roughly speaking, is not more than 2300 ft. above the sea-level.

Rising 12,370 ft. from Suruga Bay, the volcano of Fujiyama is so vast compared with the adjoining mountains that it might almost be described as an isolated peak. Roughly conical in shape, from base nearly to summit, its sides ascend with a gentle, sweeping gradient; these, up to 1500 ft. or more, are richly cultivated and furnish crops of rice and other cereals. The cultivated area is followed in turn by extensive tracts of rough, coarse grass, which run up and into the zone of forest-growth. The forest itself reaches to about five or six thousand feet, and considerably more on the western slope. Subashiri is situated at the edge of the forest and the majority of its inhabitants are either wood-cutters or charcoal-burners. The village, therefore, forms a very desirable centre for ornithological work, commanding, as it does, so many types of country and different elevations.

As the forest is periodically cut down and then planted fresh, in many parts the trees are young and scattered; and it was in these localities that I found bird-life most abundant, although Woodpeckers, Tits, and Creepers always shewed a preference for the older timber. Of course, Larks, Snipes, and many other species were only to be encountered on the open wastes of grass, while Pheasants, Shrikes, and Buntings were commonest in the scrub that fringed the woodlands. By the first days of June these latter districts became surpassingly beautiful, for the azalea (*Azalea mollis*)—which constitutes the greater part of this scrub—then came into flower and covered many acres of land with its bright orange-pink blossom.

Before I reached Subashiri nearly all the migrants (with the exception of the Cuckoos and perhaps the Swifts) had taken up their summer-quarters, and I am therefore unable to supply any dates of the spring arrival of Japanese birds; and this is somewhat disappointing, as so very little is at present known of their movements. On the whole, however, one cannot but help feeling satisfied with the results of the expedition, for, besides taking nests of *Geocichla varia* (and thus procuring for the first time indisputably authentic eggs of this so-called "British" bird), I discovered the nesting-ground of *Emberiza yessoensis* and was able to observe the interesting breeding-habits of *Gallinago australis*, while the nests and eggs of other rare species were also secured. Whenever I deemed it necessary to identify the bird (which I did in almost every case) pains were taken to procure the parent at the nest, but, as a rule, this was only done with the first clutch of eggs, the species being afterwards recognised by watching the bird return to its nest through a pair of binoculars.

Although the avifauna of Japan has so long been known to science, practically nothing has been written about the habits of the birds, and Jouy (Proc. U.S. Nat. Mus. 1883) is among the few authors who have even referred to the subject. Temminck and Schlegel, in their 'Fauna Japonica,' give no field-notes; and Messrs. Blakiston and Pryer, who did so much for Japanese ornithology, devoted most of their time to collecting; while Seebohm, who wrote 'The Birds of the Japanese Empire,' never even visited the islands, and his work is little more than an elaborated "list." A full bibliography, up to the date of its publication, will be found in the last-named volume.

In the present notes, for the sake of convenience, I have followed Seebohm's arrangement of the species. The native names were almost all gleaned from the Japanese themselves, the few exceptions being taken from Blakiston and Pryer's "Birds of Japan" published in the 'Transactions of the Asiatic Society of Japan' in 1882.

Let me conclude by mentioning my deep obligation to Mr. Alan Owston, of Yokohama, who most generously placed at my disposal one of his experienced Japanese collectors. This man was not only thoroughly familiar with the habits of all the commoner species, but was also an expert skinner, and therefore of the greatest help to me, and, in addition to this, as I was always accompanied by a good interpreter he was frequently able to give me very valuable information. I also wish to express my thanks to Dr. Ijima, of the Tokio University, and to the members of the British Legation for the kind way they assisted me in procuring my collector's permit.

II. Field-notes on the Birds observed.

1. Geocichla varia (Pall.). White's Ground-Thrush.

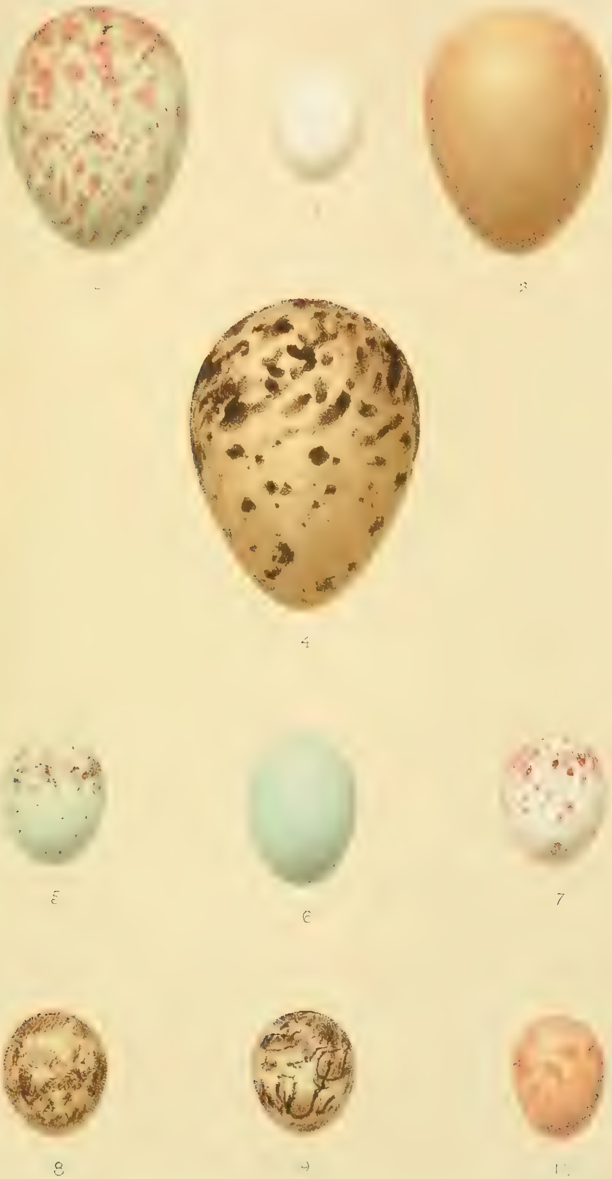
Geocichla varia Seebohm, B. Jap. Emp. p. 43; Ingram, Bull. B. O. C. vol. xxi. p. 18.

Jap.: Toratsugu.

(Eggs, Pl. IV. figs. 2, 3.)

White's Thrush was only met with in a wild state on the slopes of Fujiyama, but a single individual was seen in a cage at Kioto, near which town it had apparently been trapped. During the breeding-season this species seems to remain exclusively in the deep parts of the forest, where, being thinly distributed and of a very shy disposition, it is extremely difficult to observe. This perhaps explains the fact that hitherto little or nothing has been known of its habits. The eggs attributed to this bird by Seebohm (Eggs of Brit. B. pl. 50. fig. 1) and Newton (P. Z. S. 1897, p. 892) are so different from any of those in my series that it is highly probable that they belong to some other species. With regard to the first case, two of the original eggs (taken by Swinhoe from an unidentified nest near Ningpo, China) are now in the British Museum, where I have been permitted to examine them. His often-quoted description of the nest is also at variance with my own experience in Japan. On the other hand, the nest procured by one of Mr. Owston's native collectors and now exhibited in the Bird-Gallery of the Natural History Museum agrees closely with those taken by me, and is doubtless authentic.

I was informed by the Japanese that this Thrush only sings when the weather is cloudy and overcast and that its song is very melancholy in tone. But, on the whole, it must be an extremely silent bird, for I did not once hear it utter a note, although, for nearly three weeks, I was daily collecting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H. Grönvold pinx.
Fletcher Ltd. lith.

FIGURES OF EGGS OF JAPANESE BIRDS.

in a district where it could have been by no means rare.

News that a nest of this species had been found by a peasant was brought to me on May 19th. I was taken by the finder to an old part of the forest on the eastern slope of Fuji, where the timber was very large and the undergrowth, of saplings and shrubs, exceptionally thick. Here I was shewn a half-fallen tree, and on its slanting trunk, about 7 ft. from the ground, I saw a large, moss-covered nest. Through my glasses I could clearly discern the sitting female—an unmistakable White's Thrush. At almost the first alarm she slipped noiselessly away and was instantly lost to view among the thick foliage. In the case of all the other nests taken by me the sitting birds behaved in exactly the same manner; once disturbed they apparently flew right away, thereafter remaining absolutely silent and shewing no further signs of anxiety.

The first nest contained four eggs, almost fresh. The second nest, with three slightly incubated eggs, discovered on May 21st, was placed on the lateral branch of a spruce some twenty feet from the ground, in much the same situation. Another, found on May 28th, was also placed in a spruce, but at a greater height, being in the fork of the tree at least thirty-five feet from the ground. This nest contained four eggs, but incubation had so far advanced that it proved impossible to blow them. Two other clutches, of five and four eggs respectively, were taken on May 24th and June 3rd, while two nestlings were brought to me on May 21st. Judging from the information gathered, thirty-five feet is an exceptional height for this species to build, and it apparently prefers the fork of a tree, somewhere in the heart of the forest, from twelve to twenty feet above the ground. The nests themselves varied very little. Externally they were composed almost, if not entirely, of moss, a very few small twigs, and sometimes a leaf or two, being introduced into the body of the nest, while the cavity itself was strengthened with mud and then lined with pine-needles. In Japan the latter material is, I believe, peculiar to this bird, and my collectors told me that nests of White's Thrush could always be distinguished by this means. In some cases I found these pine-needles almost green and quite fresh-looking, so that I have little doubt the bird plucks them from the living tree when constructing its nest.

The eggs of this species are most like those of the closely allied *G. lunulata* (Lath.). In typical examples the bluish ground-colour is almost entirely obscured by the light red markings. These, in most instances, are so densely and evenly spread over the shell that they give the egg a uniform greyish-red appearance. A few specimens, however, have the overlying marks or freckles very faintly visible. But it is a curious fact that, in almost every clutch, there will be found one egg quite different from the rest and more or less distinctly spotted. The Japanese collectors declared that this was invariably the last to be produced and that until it was deposited they always left the nests untouched; and judging by the condition of the yolk when blowing I believe their statement to be perfectly correct. Mr. E. C. Stuart Baker informs me that an exactly similar diversity occurs in the case of *G. citrina* in India. The "spotted" type of egg is fairly evenly splashed or spotted with lilac underlying and light red overlying marks on a ground-colour of pale greenish blue. The size varies from 1·4 × 0·92 to 1·27 × 0·93 in.; and the average measurement may therefore be seen to be larger than that of any other Palæarctic Thrush.

The great difference in coloration is shown in the figures in the Plate, both eggs having been taken from the first clutch, found on May 19th. The two remaining eggs resemble that depicted in fig. 3, which is a typical example; the markings on fig. 2 are unusually well-defined.

2. GEOCICHLA SIBIRICA (Pall.). Siberian Ground-Thrush.
Geocichla sibirica Seebohm, B. Jap. Emp. p. 44.
Jap.: Mamejiro.

This is apparently a rare bird on Fujiyama, and I consider myself very fortunate to have obtained a nest. It seems to be a species that retires, like *G. varia,* to breed in the wilder parts of the woods. The single nest that came under my notice was discovered on May 28th by a wood-cutter working in the heart of the forest. It was placed on the thick bushy crown of a small spruce, and was not more than eight feet from the ground. In general appearance this nest was very like that of *Turdus merula,* for there was practically no moss used in the structure; but the dimensions were, of course, larger. The female sat much more closely than any of the other Japanese Thrushes. While I was inspecting the nest I heard the male singing close by: its song was very disjointed and the notes, frequently repeated, were uttered separately and without definite sequence.

Mr. Dresser, writing of this species ('Ibis,' 1901, p. 448), remarks that Japanese eggs (received through Mr. Owston) are considerably larger and more finely marked than those collected by Mr. Popham in Siberia, but that none have the ground-colour bluish. With regard to the first two statements, my eggs agree with this description, but the ground-colour is of a decided pale greenish-blue tint. The eggs are lightly marked with lilac and reddish brown. Average measurement 1·2 × 0·8 in.

3. Turdus cardis Temm. Japanese Grey Thrush.
Merula cardis Seebohm, B. Jap. Emp. p. 45.
Jap.: Kurotsugu.

This is the finest singing Thrush in Japan, and has a song almost, if not quite, as beautiful as that of *T. musicus,* which, indeed, it somewhat resembles. Like that bird it selects an elevated situation from which to sing, and is heard at its best early in the morning and at sundown. Its other notes and habits are also truly Thrush-like. I found it tolerably common both at Nikko and on the sides of Fujiyama. In the latter district nidification did not commence until late in May, and I only succeeded in finding two nests with eggs, although I was shown others in course of construction. These I had great trouble in identifying, for the females were remarkably cautious and refused to return to their eggs while there was the least sign of danger. I was therefore obliged to waste the best part of a morning before being able to procure a female at the nest.

The structure is usually placed in the branches of a coniferous tree about ten or twelve feet from the ground. Externally moss is very largely used; a distinct cup is then formed of a mixture of clay and fragments of rotten wood, which in turn is lined with rootlets, black fern-stalks, and a few dried grass-bents.

The eggs are creamy grey, boldly blotched with lilac underlying marks and spotted with rusty-brown overlying marks. Jouy says (Proc. U.S. Nat. Mus. 1883, p. 279) that they are rather larger than those of *T. chrysolaus,* but my specimens are smaller, averaging only 1·0 × 0·77 in.

4. TURDUS CHRYSOLAUS Temm. Japanese Brown Thrush.

Merula chrysolaus Seebohm, B. Jap. Emp. p. 48.

Jap.: Akahara.

The Japanese Brown Thrush was very plentiful near Subashiri, where, owing to the facility with which its nests could be found, I was able to procure a fine series of eggs. It is a good songster, but its voice is not so rich or varied as that of the preceding species. When rising from the ground it utters a noisy chattering cry very like that of a Blackbird, and it also has a similar note when there is danger near its nest—a thin, piercing sound. It builds in a variety of situations, but the favourite site is in the branches of a small cryptomeria, pine, or spruce from five to fifteen feet above the ground. The nests themselves vary about as much as do the eggs: commonly they are composed of dried grasses, straw, roots, &c., but more rarely they are made almost entirely of green moss and lined with dead leaves; I have also found horsehair used. The whole structure contains very little, or usually no mud, and in this respect always differs from the nest of *T. cardis,* which has a complete sub-lining of a clay-like substance.

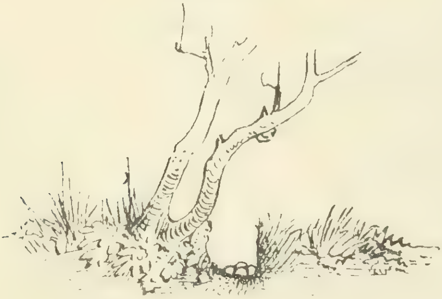
The usual type of egg has the ground-colour pale greyish green or greyish brown, which is more or less thickly and evenly spotted with rusty brown and purplish grey. Other specimens are bright bluish green, with fewer and darker spots distributed round the larger end. Between these two extremes intermediate variations occur in the eleven clutches in my possession. The dimensions vary from 1·19 × ·75 to 1·0 × ·81 in.

5. **Larvivora cyane** (Pall.). Siberian Blue Robin.
Erithacus cyaneus Seebohm, B. Jap. Emp. p. 53.
Larvivora cyane Swinhoe, P. Z. S. 1871, p. 358.
Jap.: Koruri.

(Egg, Pl. IV. fig. 6.)

This species is fairly abundant in the Subashiri woods, and was especially noticeable when I first arrived, about the middle of May, owing to the numbers of males that were then singing: they had probably only just taken up their summer-quarters. This bird lives in the dense forest undergrowth and rarely shews itself, in consequence of which the females are hardly ever seen, and the only female observed by me was that procured for the identification of the nest. It does not possess much of a song, but utters a loud musical chatter, somewhat resembling the cry of the Japanese Robin (*Erithacus akahige*), a bird, curiously enough, that I never met with in a wild state, although it is very common in cages. On May 31st I found a nest of *L. cyane* containing four eggs

Text-fig. 1.



Sectional drawing of the nest of *Larvivora cyane*.

in a thick shaded part of the wood. It was placed at the hollow root of a small tree, where it was so deeply sunk in the ground that the bright blue eggs were completely out of sight (see text-fig. 1, p. 137). Either by intention or accident the outermost wall of the nest-cavity was quite flat and the eggs, lying close up against it, were completely hidden from the front, and could only be seen with difficulty from a point immediately above.

When approaching the nest the female uttered a low *tak, tak,* and kept cocking her tail over her back like a Nightingale.

A second clutch of five eggs was brought to me on June 3rd.

The eggs, of an unspotted turquoise-blue, are somewhat oval in shape. The nine examples in my collection average 0·81 by 0·6 in.

6. Cinclus pallasi Temm. Pallas's Dipper.

Cinclus pallasi Seebohm, B. Jap. Emp. p. 54.

Jap.: Kawagarasu.

Common on many of the torrential streams and especially so in the Nikko range of mountains. A pair were nesting under a little cascade close to the Mangwanji at Nikko, and were carrying food to their young, heedless of the many tourists that were then visiting the place. As this was early in May and the young were nearly fledged, this species must be an early breeder. I was once surprised to see one of these Dippers settle, like a diminutive Gull, on the surface of a small reservoir, in which position it remained for about half a minute before flying off.

7. Pratincola maura (Pall.). Siberian Stonechat.

Pratincola maura Seebohm, B. Jap. Emp. p. 57.

Jap.: Nobi-taki.

Plentiful on Fujiyama, where I took two clutches of eggs in the third week of May: I found another nest with young on June 5th. The song and habits of this species do not differ materially from those of *P. rubicola.* The eggs in my possession, and others that I have seen from Japan, are rather darker than those of the European bird, but are otherwise very similar. Average measurements 0·72 × 0·52 in.

8. NEMURA CYANURA (Pall.). Red-flanked Bluetail.

Tarsiger cyanurus Seebohm, B. Jap. Emp. p. 58.

Jap.: Shitaki.

This bird was encountered in small numbers at a high elevation near Chuzenji, and again near Subashiri. In the latter district it is said to breed further up the side of Fuji later in the season. In Japan, therefore, it is in all probability a mountain-loving species. Its eggs are said, by the Japanese collectors, to be pure white.

9. CYANOPTILA BELLA (A. Hay). Japanese Blue Flycatcher.

Niltava cyanomelæna Seebohm, B. Jap. Emp. p. 59.

Xanthopygia cyanomelæna Sharpe, Cat. B. Br. Mus. iv. p. 251.

Cyanoptila bella Sharpe, Hand-list of B. iii. p. 238.

Jap.: Oruri.

I found this beautiful Flycatcher common in many parts of Japan and especially in the more hilly and densely-wooded districts. Rising to the top of a tree the male will sing very prettily for a long time, but its song is by no means varied. When collecting on the slopes of Fuji, I found three nests of this bird. All of them were placed in the deep recess of a damp, moss-covered bank by the side of a burn. The mossy exterior of these nests harmonized so perfectly with their surroundings that, from a little distance, they were extremely difficult to perceive. However, once withdrawn from their natural positions, they were found to be very ornate, for the inner lining was composed almost entirely of the bright orange-coloured "flowering stalks" (capsule and seta) of a certain kind of moss. The eggs were likewise conspicuous, being very light in coloration. I cannot say whether this species invariably uses the above-mentioned material for a lining, but from enquiries it appears to almost always do so in the neighbourhood of Subashiri. Under these circumstances it would seem that the presence of an overshadowing ledge is a necessary protection for the nest.

The eggs are of a warm cream-colour, with sometimes an indistinct zone of grey and buff speckles. Size 0·79 × 0·61 in.

10. XANTHOPYGIA NARCISSINA (Temm.). Narcissus Flycatcher.

Xanthopygia narcissina Seebohm, B. Jap. Emp. p. 61.

Jap.: Kibitaki.

(Egg, Pl. IV. fig. 5.)

On the whole, the Narcissus Flycatcher is a common bird in Japan, and I observed it in some numbers at Kioto, Nara, Nikko, and many other places. It prefers the dark, big-timbered parts of the forest that are studiously avoided by the majority of other species. In the silence of these surroundings the persistent reiteration of its melancholy song has a dreamy effect upon the listener and soon becomes intolerably wearisome.

When in the Subashiri district towards the end of May, I took two clutches of eggs. The nests, both placed in the cleft or hollow of a half-rotten tree. were somewhat loosely constructed of moss, leaves, and rootlets, the last being used as a lining. The first set of eggs were pale greenish blue in ground-colour, spotted round the larger end with light brown: in the second clutch the eggs were rather greener and the markings very faint, being evenly and closely distributed over the whole shell. Average size 0·69 × 0·56 in.

11. ALSEONAX LATIROSTRIS (Raffles). Brown Flycatcher.

Muscicapa latirostris Seebohm, B. Jap. Emp. p. 62.

Jap.: Kosamebitaki.

This bird is common in the woods below Chuzenji, as it is also near Subashiri. Its nest is a very neat, lichen-covered cup and is usually placed on the horizontal branch of an evergreen tree close against the bole. The male possesses a pleasing, though somewhat insignificant song. I took several clutches about the third and fourth weeks of May. The eggs are pale greyish green, very faintly clouded or washed, usually round the obtuse end, with light red. Average measurements 0·66 × 0·5 in.

12. TERPSIPHONE PRINCEPS (Temm.). Japanese Paradise-Flycatcher.

Terpsiphone princeps Seebohm, B. Jap. Emp. p. 63.

Jap.: Sanko-cho.

This bird is by no means rare in the forests round Fujiyama, where it is more often heard than seen, owing to its love of seclusion. It seems to have no real song, but utters a few unmusical notes. Nidification was apparently just commencing when I left Subashiri on June 6th, for the only nest found was taken two days before my departure, and contained an incomplete clutch of three eggs. This nest was slung under the fork of a small branch in the centre of a wood and was tidily built of moss, roots, and a few grass-stalks. The eggs are white with a salmon-pink tinge, and are finely speckled round the larger end with grey underlying and dark reddish-brown overlying spots. Size 0·82 × 0·61 in.

13. Hypsipetes amaurotis (Temm.). Brown-eared Bulbul.

Hypsipetes amaurotis Seebohm, B. Jap. Emp. p. 64.

Jap.: Hiyodori.

This Bulbul was fairly common in most of the parts of Hondo that I visited. It is a restless noisy species, and two or three individuals are usually encountered together, calling to one another with a loud squealing cry. This is usually uttered during flight, but the bird will sometimes continue its vociferations from the top of a tree.

14. Zosterops japonica Temm. & Schl. Japanese White-eye.

Zosterops japonica Seebohm, B. Jap. Emp. p. 68.

Jap.: Mejiro.

I found several nests of this species near Subashiri, where it is common. It is everywhere a popular cage-bird, and great numbers are kept by the Japanese for the sake of its pleasing song. In captivity the chestnut colouring on the flanks is said to become considerably darker owing to artificial feeding, and my observations go to corroborate this fact. Such being the case, separatists should be very cautious and not rely too much on this variable character when dividing the geographical races in this genus. Jouy's assumption (afterwards copied by Seebohm) that the nest of this species is placed on the ground is, of course, absolutely unfounded. As a matter of fact, I found one situated as high as eleven feet above the ground, but it is usually situated at not more than four or five feet. The nest is built under the fork of a small branch, which is woven into the structure. The eggs are white and measure 0·65 × 0·5 in.

In a cage at Osaka I saw a beautiful variety of this bird: the distribution of the normal colours was faintly visible, being indicated on the upper parts by a pale yellowish-white tint.

15. **Phylloscopus coronatus** (Temm. & Schl.). Temminck's Willow-Warbler.

Phylloscopus coronatus Seebohm, B. Jap. Emp. p. 68; Ingram, Bull. B. O. C. vol. xxi. p. 18.

Jap.: Sendai-mushikui.

(Egg, Pl. IV. fig. 1.)

About the middle of May the song of this Warbler could be heard throughout the Subashiri woods, but towards the end of the month the birds apparently thinned out or became more silent. The song consists of two or three pleasing notes followed by a somewhat harsh sound, the latter being like that of a European Greenfinch: the whole might perhaps be expressed by the syllables *tsu-eet, tsu-eet—tzzaa*. Sometimes these notes are changed to a soft *cheroo, cheroo,* but the former song is that most commonly indulged in. On May 28th a Crowned Willow-Warbler was noticed carrying leaves, and its domed nest was subsequently found concealed among some dead branches on the side of a bank. This was under the shade of an avenue of tall cryptomerias leading to the Shinto Shrine at Subashiri, and was immediately in front, and within a few yards, of the priest's house. The first egg was deposited on June 2nd, after which one was laid every morning until I left on the 6th. While identifying the female I found that she was usually on the nest some time between the hours of 5.30 A.M. and 7 A.M. Another nest was shown to me, but it had unfortunately met with some accident and only contained a broken egg-shell. It was also placed on a bank and under trees, but in this case the only concealment was the surrounding herbage. They were very similar in construction, being chiefly composed of dead and half-rotten leaves with a few grass-blades intermixed and lined with the seed-stalks of moss. The eggs are pure white without much gloss, but before being blown the yolk inside gives them a translucent yellowish-pink appearance. They measure 0·65 × 0·5 in.

16. PHYLLOSCOPUS XANTHODRYAS Swinhoe. Swinhoe's Willow-Warbler.

Phylloscopus xanthodryas Seebohm, B. Jap. Emp. p. 70.

Jap.: Maboso.

This bird inhabits a higher part of the forest than *P. coronatus,* although, when I first arrived at Subashiri, small numbers were to be found in the same districts. It was at an elevation of between four and five thousand feet on the sides of Fuji that this bird became really common, and I met with it in great abundance, but I was unfortunately too early in the season to find any eggs. It is said to breed about the middle or end of June. Like many of its allies it is a persistent songster, and will sing all the time it is working its way through the woods, so that its movements may be easily followed by the ear. The song is vaguely suggestive of that of a Chiffchaff, but is more of a continuous trill, sounding like *chi-chirra, chi-chirra, chi-chirra.*

17. ACROCEPHALUS ORIENTALIS (Temm. & Schl.). Eastern Great Reed-Warbler.

Acrocephalus orientalis Seebohm, B. Jap. Emp. p. 71.

Jap.: Oyoshikiri.

This species is abundant in many of the reed-beds, where its habits and song seem almost identical with those of its European representative *A. arundinaceus.* I visited a swampy part of Lake Yamanaka, which is rather more than two thousand feet above the sea-level, and there found it a common bird; but the nests were only being built on June 3rd, and I discovered no eggs.

18. Acrocephalus bistrigiceps Swinhoe. Schrenck's Reed-Warbler.

Acrocephalus bistrigiceps Seebohm, B. Jap. Emp. p. 71.

Jap.: Koyoshikiri.

While Schrenck's Reed-Warbler was missing from the eastern slope of Fuji, it was remarkably common a little further round on the north-eastern side, from Lake Yamanaka upwards for about fifteen hundred feet. Although found by the lake-side, the presence of water seemed by no means essential to its welfare, for the bird was equally plentiful amongst the rough grass and scrub three or four miles up the mountain and in places where there was no water of any kind. At times the whole country-side resounded with its song, which bore a distinct resemblance to that of certain other members of the genus. It was obviously imitative. Part of a Skylark's melody would be coupled with the notes of a Grey-headed Bunting, while these, in turn, would be followed by a little of the Stonechat's song—all the birds mimicked being common in the same neighbourhood. When singing the male will climb to the point of an upstanding twig or plant-stalk, and there display itself as conspicuously as its sober plumage will allow.

This Warbler had not commenced to breed by June 4th.

19. Urosphena squamiceps (Swinhoe). Short-tailed Bush-Warbler.

Cettia squamiceps Seebohm, B. Jap. Emp. p. 74.

Jap.: Kawari-uguisu.

(Egg, Pl. IV. fig. 10.)

This bird is apparently of very local distribution, for I only found it within a limited area on Fujiyama. It is essentially a sylvan species, and never wanders far from the depth of the woods, where, owing to its habit of keeping to the undergrowth, it is extremely difficult to observe. The song is a shrill impulsive *zi, zi, zi, zi*, uttered in a high key. On May 23rd a nest containing seven eggs, slightly incubated, was discovered in a partial clearing of the forest, hidden under the roots of an old upturned tree-stump. It was an open nest and built principally of moss, lined with small fern-roots and the orange-coloured "flowering-stalks" of another kind of moss. This latter material is utilised in nest-building by several species in Japan, but more especially so by *Cyanoptila bella*, under which heading I have referred to it at greater length.

The eggs are closely speckled and blurred with rich brownish pink or salmon-brown, which almost obscures the lilac-grey underlying marks and the white ground-colour. They measure 0·68 × 0·5 in.

20. CETTIA CANTANS (Temm. & Schl.). Japanese Bush-Warbler.

Cettia cantans Seebohm, B. Jap. Emp. p. 74.

Jap.: Uguisu.

The Japanese Bush-Warbler, the "Nightingale" of the Japanese themselves, is perhaps one of the best-known birds in the Empire, owing to its loud musical song, which, in the spring and early summer, is a very common sound in all the wooded districts. For the size of the bird its voice is remarkably powerful and penetrating, and the sound of it reaches to a very great distance. The true song is rather monotonous, resembling the first few notes of that uttered by the European Nightingale (*Daulias luscinia*), but from this it will suddenly change and break out into a shrill cachinnation or chatter, a sound which, I believe, is also used by the bird as a cry of alarm.

The favourite haunts of this species are on the wooded slopes of the foot-hills, frequently at some distance from water.

Between May 20th and June 6th I discovered six nests of this bird, but only two of these contained eggs, the others having young of various ages. In both cases the eggs were quite fresh, and presumably the birds were laying for a second time. The nests (with one exception) were all placed in low thickets of dwarf bamboo (*Bambusa senanensis*), about two or three feet from the ground. In form they were domed, with a somewhat large side-entrance: they were composed externally of big coarse blades of grass and dried leaves of the bamboo, being lined with finer material and hairs.

After having carefully observed this bird in many parts of Japan, I cannot persuade myself of the existence of the lesser species *C. cantillans* (T. & S.). It sole claim to separation lies in its slightly smaller measurements, but as the two birds admittedly live side by side, with exactly similar habits, this is, I think, insufficient distinction. The theory that *C. cantillans* is the female of the other may be correct, but it is more probable that this species is very variable with regard to size.

As a cage-bird the Bush-Warbler is greatly prized by the Japanese, and individuals possessing a specially fine voice (which is often cultivated in captivity) command very high prices.

The eggs in my collection are of a uniform reddish-chocolate or reddish-brown colour, considerably darker than those of *C. cettii*, with which they have been compared. In texture the shell is also rather more glossy. Dimensions 0·71 × 0·55 in.

21. Parus borealis restrictus Hellm. Japanese Marsh-Tit.

Parus palustris japonicus Seebohm, B. Jap. Emp. p. 81.

Parus borealis restrictus Hellm. Orn. Jahrb. 1900, p. 215.

Parus atricapillus restrictus Hart. Vög. pal. Fauna, 1905, p. 380.

Jap.: Higara.

By no means rare in certain parts of the Fujiyama forests, being commonly encountered among the old coniferous trees, which are also much favoured by other Titmice.

22. Parus ater insularis Hellm. Japanese Cole-Tit.

Parus ater pekinensis Seebohm, B. Jap. Emp. p. 82.

Parus ater insularis Hellm. Orn. Jahrb. 1902, p. 36.

Jap.: Kogara.

Tolerably common, and found in the same localities as the preceding species. The song of this bird is very like that of its European representative; indeed, if differing at all it does so only in the intonation of the notes. On May 29th I found a nest containing eight eggs placed in a small hole of a spruce about ten feet from the ground. This was composed of a little moss, mixed with large quantities of hare's fur. The birds must have been at some pains to gather the latter material, for hares seemed to be very scarce in the district. The eggs are not to be distinguished from those of the typical *P. ater*.

23. PARUS MINOR Temm. & Schl. Japanese Great Tit.

Parus atriceps minor Seebohm, B. Jap. Emp. p. 83.

Jap.: Shiju-kara.

This was the commonest Titmouse found near Subashiri, being widely distributed throughout the wooded districts. Two nests which I discovered on May 29th and June 4th contained young, but I was fortunate enough to find an infertile egg in the first. Both these nests were placed in the hole of a rotten tree-stump, but I understand that the bird is also fond of building in the crevice of a stone wall The above-mentioned egg resembles typical examples of *P. major*, but measures only 0·63 × 0·48 in.

24. PARUS VARIUS Temm. & Schl. Varied Tit.

Parus varius Seebohm, B. Jap. Emp. p. 85; Ingram, Bull. B. O. C. vol. xxi. p. 18.

Jap.: Yama-gara.

(Egg, Pl. IV. fig. 7.)

Near Subashiri this species is somewhat locally distributed, although fairly plentiful in some parts of the forest, particularly in the higher districts; it is also common near Nikko, where it is a very favourite cage-bird. On June 2nd, at an altitude of about five thousand feet, I found a nest of this Tit in the hollow centre of a newly-felled tree; as this hole ran perpendicularly down into the stump, without any outlet, it is difficult to understand why it had not been filled with water during the heavy rains that had recently fallen. The female sat so closely that she allowed me to catch her on the nest, even after we had been working with an axe for some time to enlarge the aperture. The eggs are pure white, somewhat boldly spotted about the larger end with reddish brown, and, in one or two instances, with distinctly paler and lilac underlying marks. To find two colours in the eggs of a Titmouse is, I believe, unusual. The eggs measure 0·7 × 0·55 in.

25. Acredula trivirgata Temm. Japanese Long-tailed Tit.

Acredula trivirgata Seebohm, B. Jap. Emp. p. 87.

Jap.: Enaga.

A goodly number of these birds were encountered on the slopes of Fuji, where, owing to their habit of moving about in company and incessantly calling to one another, it was an easy species to observe. In many cases the young had flown by the end of May, and on the 26th I found an old nest in a bush about four feet from the ground, while two days later I was shewn a second containing young and a single addled egg. This last nest was placed in an isolated pine growing on a piece of waste land about thirty or forty yards away from a wood.

The note of this species is different from that of *A. rosea* and may easily be distinguished. The egg in my collection measures ·55 × ·45 in., and is distinctly marked with small light red spots.

26. Troglodytes fumigatus Temm. Japanese Wren.

Troglodytes fumigatus Seebohm, B. Jap. Emp. p. 89.

Anorthura fumigata Sharpe, Hand-list of B. vol. iv. p. 92.

Jap.: Misosazai.

This Wren was met with in several parts of Japan. In song and habits it closely resembles *T. parvulus*. The only nest found contained young on May 18th and was placed inside an old deserted shanty. Exteriorly it was composed entirely of moss.

27. Certhia familiaris japonica Hartert. Japanese Tree-Creeper.

Certhia familiaris Seebohm, B. Jap. Emp. p. 91.

Certhia familiaris japonica Hart. Nov. Zool. vol. iv. p. 138.

Jap.: Kibashiri.

A few pairs of Creepers were seen among the big forest-growth on Fujiyama at 5000 ft. The habits of these birds seemed exactly similar to those of the European race.

28. SITTA EUROPÆA AMURENSIS Swinhoe. Daurian Nuthatch.

Sitta cæsia amurensis Seebohm, B. Jap. Emp. p. 92.

Jap.: Ki-mawari.

In the Chuzenji woods I several times heard the notes of a Nuthatch, which doubtless belonged to this species.

29. CORVUS MACRORHYNCHUS JAPONENSIS (Bp.). Jungle-Crow.

Corvus macrorhynchus japonensis Seebohm, B. Jap. Emp. p. 94.

Jap.: Hashibuto-garasu.

This Crow is found throughout the length and breadth of Japan, being, if anything, more at home in the towns and cities than in the country districts. It is particularly common in Tokio, where it nests early in the spring in the parks and grounds of the Imperial Palace.

30. GARRULUS JAPONICUS Temm. & Schl. Japanese Jay.

Garrulus japonicus Seebohm, B. Jap. Emp. p. 101.

Jap.: Kakesu.

Fairly plentiful on the wooded slopes of Fuji, where I took two clutches of eggs, one on May 21st and another on June 2nd, the nest in the latter case being at an elevation of five thousand feet. In its shy habits and harsh cry this bird is very like the European species. When pulling the first nest to pieces I found that the foundation contained a layer or platform of clay about an inch in thickness, but otherwise it was composed almost exclusively of roots. The second had the exterior adorned with a kind of grey moss-like plant or lichen, taken from the festoons that covered the branches of many of the surrounding trees. This parasitic growth is, I believe, *Lycopodium sieboldi*, and it seems to become very prevalent at altitudes of over four thousand feet. My eggs are indistinguishable from those of *G. glandarius*, and measure 1·25 × 0·9 in.

31. LANIUS SUPERCILIOSUS Latham. Japanese Red-tailed Shrike.

Lanius superciliosus Seebohm, B. Jap. Emp. p. 104.

Jap.: Akamozu.

Plentiful round Fujiyama, where it frequents the outskirts of the forest. I took two nests (June 4th and 5th), but did not have the opportunity of satisfactorily identifying the birds, though the eggs in both cases agree perfectly with those attributed to this species. I discovered the second nest by seeing the male (which, at a distance, certainly looked more like *L. bucephalus*) catch a winged insect and disappear with it into the wood. On hurrying to the spot, he flew out of a tangled bush, where I found the female covering a clutch of five eggs. The lining of this nest contained a little of the hair-like growth found on the boughs of trees.

32. LANIUS BUCEPHALUS Temm. & Schl. Bull-headed Shrike.

Lanius bucephalus Seebohm, B. Jap. Emp. p. 106.

Jap.: Mozu.

This bird is common in many districts. It apparently commences nidification very early in the season, for I saw fully fledged nestlings in a bird-shop at Osaka on April 23rd. This and the preceding species both resent any intrusion by uttering the harsh grating cries typical of many Shrikes.

33. PERICROCOTUS CINEREUS Lafres. Ashy Minivet.

Pericrocotus cinereus Seebohm, B. Jap. Emp. p. 106; Ingram, Bull. B. O. C. xxi. p. 18.

Jap.: Sanshokui.

I met with this species commonly near Nara, Nikko, and round Fujiyama, but it is not easily observed, owing to its habit of always keeping to the topmost branches of very high trees. On the other hand, its presence will often be revealed by its clear trilling note, which is continuously uttered by the birds as they move restlessly about in small parties, flying from one tree-top to another. Even during the nesting-season individuals seem to be constantly communicating with each other by means of this shrill twittering cry, and I have actually heard a bird answer its mate while sitting on the nest.

The Ashy Minivet builds amongst the thin uppermost branches of some tall tree, and its nest is therefore extremely difficult to locate and often quite inaccessible. It is beautifully made, being a small and very compact cup with the exterior closely covered with flakes of lichen. The framework is made of fibrous strips of wood, a little moss, and a few grass-bents and is lined with black rootlets; the whole structure appears to be firmly knit together by means of cobwebs. The cup, measuring less than three inches across, is so small in proportion to the bird (whose total length is 7¾ inches) that the tail of the incubating parent may be seen projecting a considerable way over the nest.

When my collector commenced to climb the tree containing the nest both birds became extremely excited, the male, in particular, making elaborate feints to lure us away. Squealling loudly he came fluttering and tumbling downwards, as though painfully wounded. Then, having approached within two or three yards (which was as near as he dared), he kept steadily flapping his wings and fanning his tail in a very strange manner, this being evidently done to attract our attention. If possible the birds appeared even more distressed when a dog came upon the scene, and the animal was made an object of frantic demonstrations.

The first nest, containing five slightly incubated eggs, was found on May 25th, and a second was discovered a few days later, but was too high up to be reached.

The brooding-bird is fed on the nest by its mate.

The eggs are stone-white, boldly marked with hair-brown over underlying blotches of lavender-grey. Average size 0·81 × 0·66 in.

34. Spodiopsar cineraceus (Temm.). Grey Starling.

Sturnus cineraceus Seebohm, B. Jap. Emp. p. 107.

Jap.: Muku-dori.

This bird is fairly common in the city of Tokio, where it was apparently breeding at the time of my visit. I did not meet with it in the mountain districts.

35. MOTACILLA ALBA GRANDIS (Sharpe). Japanese Pied Wagtail.

Motacilla japonica Seebohm, B. Jap. Emp. p. 112.

Motacilla alba grandis Hartert, Vög. pal. Fauna, p. 309.

On most of the mountain rivers this bird is very common; I found it especially so on the rapids of the Katsuragawa in the Kioto District, where some of the young had already left the nest by April 29th. All, however, had not flown, and on May 3rd I found a nest containing six fledgings. This was placed in a tuft of water-grass close to the weir of Arashiyama. Ten days later I found another nest, also with young, built under a large boulder in the river-bed at Nikko. By these dates it may be seen that the bird is a very early breeder, and it doubtless rears two broods in the season. This species sings more freely than the European Pied Wagtails.

36. MOTACILLA BOARULA MELANOPE (Pall.). Eastern Grey Wagtail.

Motacilla boarula melanope Seebohm, B. Jap. Emp. p. 114.

Jap.: Ki-sekirei.

The Japanese representative of the Grey Wagtail somewhat differs in its habits from the European bird. Instead of being found in the wilder parts of the torrential streams (where it is replaced by the Japanese Pied Wagtail), it shews a marked preference for the neighbourhood of villages, being commonest in the mountain districts. Here the males may often be seen singing composedly from the house-tops and taking no heed of the noise and bustle of the streets below. I believe a thatched roof is the usual site selected by this species for its nest, although I did not personally find one in such a position; the first which I discovered (May 20th) contained young and was placed in a small stack. The second was only in course of construction, but I was surprised to find it being built in the branches of a clipped yew growing by the main street of Subashiri. This Wagtail is particularly plentiful in the vicinity of Nikko.

37. Anthus maculatus Hodgs. Eastern Tree-Pipit.

Anthus maculatus Seebohm, B. Jap. Emp. p. 115.

Jap.: Ki-hibari.

Tolerably abundant round Fuji, where I found it nesting by the end of May. It is distinctly arboreal, and in its habits greatly resembles the true Tree-Pipit. Like that bird it possesses an excellent song, which it utters both during flight and from the point of a tree. Its vertical range during the breeding-season extends to an altitude of at least 5000 ft. When returning to its nest the bird does so very stealthily, approaching it from some distance along the ground. All the Japanese eggs I have seen of this species vary very little *inter se*, but differ from those collected on the continent; these latter might be described as more nearly approaching the warm-coloured, distinctly spotted varieties of *A. arboreus*. The thirteen eggs in my possession (from three clutches) average 0·81 × 0·62 in. On a ground-colour of very pale bluish white, they are profusely speckled like those of *A. pratensis*, but with grey underlying and brown overlying marks; these are rather more dense about the larger end and form an indistinct zone.

38. Alauda arvensis japonica (Temm. & Schl.). Japanese Skylark.

Alauda arvensis japonica Seebohm, B. Jap. Emp. p. 118.

Jap.: Hibari.

Common in all suitable localities, and its habits seem to be exactly similar to those of the European Skylark. Two or more broods are undoubtedly reared in the year, as I found alternately young and eggs throughout my stay in Japan. The eggs in my collection average 0·85 × 0·65, and are greyer than typical examples of *A. arvensis*.

39. Ligurinus kawarahiba minor (Temm. & Schl.). Japanese Greenfinch.

Fringilla kawarahiba Seebohm, B. Jap. Emp. p. 127.

Jap.: Kawarahiwa.

This Greenfinch was common round Subashiri, where it was nesting in the tall cryptomerias. One nest, placed about twenty feet from the ground, contained three fresh eggs on May 27th, while fully fledged young were discovered two days later, facts which seem to indicate that the species rears at least two broods in the season. Its eggs resemble those of *Ligurinus chloris* (Linn.), and measure about 0·79 × 0·55 in.

The Japanese Hawfinch (*Coccothraustes personatus*) was not an uncommon cage-bird, but I did not encounter it in a wild state: the Common Hawfinch (*C. vulgaris*) was likewise only seen in cages.

40. Pyrrhula griseiventris Lafr. Oriental Bullfinch.
Pyrrhula griseiventris Seebohm, B. Jap. Emp. p. 129.
Jap.: Uso.

Although so common as a cage-bird I found this species by no means plentiful in any of the districts that I visited. I once or twice heard its note, which is a pipe not unlike that of *P. europæa* Vieill., near the village of Subashiri, but met with it more freely on the slopes of Fuji at an altitude of about five thousand feet.

41. Passer montanus Linn. Tree-Sparrow.
Passer montanus Seebohm, B. Jap. Emp. p. 130.
Jap.: Suzume.

Wherever there are towns and villages the Tree-Sparrow may be found abundantly in all parts of the Empire, nesting principally under the tiles of the living-houses and more rarely in the holes of trees. As is the case throughout the East, the Japanese bird is much more domesticated than the European *P. montanus* and is inseperably associated with human dwellings.

42. Emberiza ciopsis Bp. Japanese Meadow-Bunting.
Emberiza ciopsis Seebohm, B. Jap. Emp. p. 131.
Jap.: Hojiro.

This Bunting is widely distributed and very common in most of the Japanese islands. It has a moderately good, if somewhat short, song, which it usually utters from the top or jutting branch of a tree. Compared with its European ally *E. cia*, it is much more of a sylvan species, being usually encountered on the wooded slopes of the mountains. The nest resembles that of *E. citrinella*, and is frequently placed in a young spruce or small bush within a foot of the ground. The eggs are pale bluish white with a very faint zone of violet-grey specks, over which there are clear spots and scrawls of purplish black. Size 0·8 × 0·61 in.

In a bird-shop at Kobe I saw a perfect specimen of an albino Bunting, which I feel convinced belonged to this species.

43. EMBERIZA YESSOENSIS Swh. Japanese Reed-Bunting.

Emberiza yessoensis Seebohm, B. Jap. Emp. p. 132; Ingram, Bull. B. O. C. vol. xxi. p. 18.

Jap.: Nabe-kaburi.

(Eggs, Pl. IV. figs. 8, 9.)

This species seems to be very local, for I only found it inhabiting a small area, viz., the rough grass-lands above Lake Yamanaka on the north-east slope of Fuji. Here it was fairly common, and when I visited the place early in June the birds had all paired and were clearly shewing signs of nesting. A whole day spent in futile search convinced me that I was premature in my efforts to find eggs, and that it would be at least a fortnight or three weeks before any were laid. With this knowledge I instructed the collector to return at a later date and send me a nest and eggs together with the female. This he was fortunately able to do, taking them on June 19th. Mr. Owston, on learning of this success, immediately paid a visit to the locality and was lucky enough to take two nests himself, and I am indebted to that gentleman for some interesting details. He informs me that these nests were within five or six inches of the ground and placed between the stems of small shrubs, the base of one, it seems, actually resting on the ground itself and being built up to the height mentioned. Referring to the habits of this Bunting he says "the birds appeared to be unwilling to stay away from their nests very long, probably owing to the tremendous downfall of rain which continued all the time we were on the grounds"; he further adds that the females shewed much concern when their eggs were approached.

I found this species very silent, and a "chipping" note, common to many Buntings, was the only sound I heard it utter. The males in summer-plumage, with beautiful black heads, could often be seen sitting boldly on some conspicuous twig, but as soon as they were disturbed they dropped down and were lost to sight among the thick grass. The females were at all times shy, and spent much of their time on the ground. The nest received is small in size. It is composed of dead grass-blades and stalks and is lined first with fine rootlets and then with horse-hair. For a Bunting the eggs are unusually round in shape, measuring 0·65 × 0·55 in. They are dirty white in ground-colour, profusely blotched and spotted with yellowish-brown or umber-brown marks, among which are intermingled a few dark hair-lines or streaks. The eggs differ slightly; one shews the ground-colour better and has more scrawling on it than the others, being also of a warmer shade of brown.

44. Emberiza fucata Pall. Grey-headed Bunting.

Emberiza fucata Seebohm, B. Jap. Emp. p. 134.

Jap.: Ho-aka.

Notwithstanding the fact that this species was common in many places round Fuji, I did not succeed in finding any nests and I therefore conclude that it is a rather late breeder. It inhabited the more open scrub-like parts of the country, where its insignificant and chirpy song could frequently be heard.

On the whole, it was not very shy and would flutter up close in front of one, only to settle again in the undergrowth a few yards away.

45. Emberiza sulphurata Temm. & Schl. Siebold's Bunting.

Emberiza sulphurata Seebohm, B. Jap. Emp. p. 135.

Jap.: Nojiko.

This and the following species are to be found abundantly in the Subashiri district, and, with the exception of *Turdus chrysolaus*, I took more of their nests than of any other bird. Both of these Buntings keep very much to the woodlands, which is an uncommon characteristic in members of the genus, the majority preferring a more or less open type of country. Siebold's Bunting possesses a very fair song, something like that of a Linnet, and on this account it is not infrequently kept in cages by the Japanese. Its nest—composed of rough grasses and lined with fern-rootlets and hair—is placed in a low bush or young spruce, from one to five feet from the ground. It apparently breeds from the middle of May onwards to the commencement of July (Jouy, Proc. U.S. Nat. Mus. 1883). The female is a close sitter.

The average measurement of the eggs is 0·7 × 0·56 in. As Seebohm points out (B. of Jap. Emp. p. 135), these resemble the eggs of the Garden-Warbler, but examples in my collection may be recognised by having more of the Bunting-streaks on them.

46. Emberiza personata Temm. Japanese Bunting.

Emberiza personata Seebohm, B. Jap. Emp. p. 136.

Jap.: Awoji.

If anything, this Bunting outnumbered the foregoing species and I found over a dozen nests round Subashiri, all, with a single exception, being placed on the ground. According to the Japanese collector, it is unusual to find this bird building in any other situation, and the nest I took from a bush three feet from the ground was no doubt exceptional. In habits this species seems to be closely allied to Siebold's Bunting, and its song bears a likeness to that bird's, although perhaps less varied and not so pleasing.

The eggs vary both in colour and shape. The shell is bluish white, densely blotched with lilac underlying marks and russet-brown or purplish-brown overlying marks, and with sometimes a few irregular lines of a darker shade. The lilac underlying blotches will occasionally predominate. In size they range from 0·85 × 0·56 to 0·71 × 0·58 in.

47. Hirundo gutturalis (Scop.). Eastern Chimney-Swallow.

Hirundo rustica gutturalis Seebohm, B. Jap. Emp. p. 141.

Jap.: Tsubame.

On April 17th, when steaming in an easterly direction between Shanghai and Nagasaki, all through the day an intermittent stream of Swallows could be seen overtaking and passing the vessel. The weather was calm and overcast, and the birds, in small parties of half a dozen or less, were all flying close to the surface of the water and taking almost exactly the same course as the ship. In company with these were a few Wagtails (*Motacilla boarula melanope*). This observation is, I think, of some interest, as it serves to shew the migratory route taken by these birds on their vernal passage. They apparently keep to the coast of the continent until it falls sharply back to form the Yellow Sea, when they probably quit the mainland and strike across to Japan, *viâ* the Chusan Archipelago—which, of course, would be the shortest and most direct route from China. These migrants were doubtless somewhat belated, for when we reached Nagasaki I found that many Swallows had already taken up their summer-quarters.

Owing to the protection given to this species by the Japanese, it displays great confidence and seems to be very intimately associated with mankind, for it is hardly ever encountered far from a village or town. Here it may be seen nesting under the low roofs of the houses, scarcely more than a foot or two above the heads of the occupants.

The only egg I took was remarkably small, measuring 0·7 × 0·5 in. In coloration, however, it resembles the typical egg of *H. rustica*.

48. PICUS MAJOR JAPONICUS (Seebohm). Japanese Great Spotted Woodpecker.

Picus major japonicus Seebohm, B. Jap. Emp. p. 153.

Jap.: Akagara.

I met with this Woodpecker commonly in the Nikko mountains and on Fujiyama, while in both districts it seemed to keep entirely to the higher elevations. On June 2nd my attention was attracted to a nesting-hole of this species by the tell-tale clamour of the young birds. These were very advanced and I should think in a few days would have left the nest.

49. Iyngipicus kisuki (Temm.). Japanese Pigmy Woodpecker.

Iyngipicus kisuki Seebohm, B. Jap. Emp. p. 156.

Jap.: Kogera.

Near Kioto I met with the true *I. kisuki*. Even in life it may be seen to have a much darker crown than the more northern or mountain form (*I. kisuki seebohmi*), which is not very rare in the mountains round Chuzenji or on Fujiyama. Jouy (Proc. U.S. Nat. Mus. 1883) speaks of these birds as almost invariably associated with flocks of Tits, but I cannot concur with this statement, as I never once found them in company with any of the Paridæ; if they flock with them at all it must be, I think, in the autumn or winter months, when many species are known to gather together.

These Pigmy Woodpeckers are by no means shy, and I had the opportunity of watching one for some time, as it was feeding within a few feet of me, gathering quantities of ants from the bough of a cherry-tree. Its note is a small, rasping, *cheet, cheet*.

50. Turtur orientalis (Lath.). Eastern Turtle-Dove.

Turtur orientalis Seebohm, B. Jap. Emp. p. 160.

Jap.: Kiji-bato.

I did not find this bird very common; but fair numbers were observed in and about Kioto, as well as on the sides of Fujiyama, though no eggs were taken.

51. Cuculus canorus Linn. Common Cuckoo.

Cuculus canorus Seebohm, B. Jap. Emp. p. 169.

Jap.: Kakko.

This bird did not arrive in the Subashiri district in any numbers until the last few days of May. It seemed to shew a preference for the higher parts of the forest and was very plentiful at five thousand feet, where the other Cuckoos were either very scarce or altogether absent. I could not detect that its cry differed in any way from that uttered by European examples of the species. The Japanese collector assured me that he was able to distinguish the eggs of all the four parasitic birds found in the neighbourhood; but he admitted he had never been able to prove absolutely their identity. However, on one point he seemed tolerably certain, *i. e.* that the same species of birds are selected every year by each kind of Cuckoo, because the eggs found in the nests of certain foster-birds are always pretty much of a similar type.

52. CUCULUS SATURATUS Hodgs. Himalayan Cuckoo.
Cuculus intermedius Seebohm, B. Jap. Emp. p. 169.
Jap.: Tsu-tsu-dori.

This was the first species of Cuckoo to reach Fujiyama, and its cry could be heard on all sides by May 20th. Enquiries illicited the information that a few individuals had been heard at least five days earlier.

Closely as this bird resembles *C. canorus* I found that the Japanese fully appreciated the difference, but this was doubtless brought to their notice in the first place by the bird's very distinct call—a muffled *hoo, hoo, hoo,* uttered two, three, or more times in succession, preferably from the top of an exposed dead tree or an upstanding branch of the forest.

53. CUCULUS POLIOCEPHALUS Lath. Little Cuckoo.
Cuculus poliocephalus Seebohm, B. Jap. Emp. p. 171.
Jap.: Hototo-gisu.

Towards the end of May the inhabitants of Subashiri were vigilantly on the look-out for the arrival of this small Cuckoo, and the first bird was recorded on the 25th of that month. It appears that the country-folk in this neighbourhood have a superstitious belief that the body of this bird possesses peculiar curative properties. In consequence of this it is most eagerly sought after and for several days following its arrival the sound of shots may be frequently heard in the surrounding wood. Happily for the species it is extremely wary, like most of its allies, and not many fall victims to this foolish superstition. Wishing to procure a specimen for my collection, I offered a Japanese a comparatively hight price for one, but he flatly refused it, even though I promised to return the body after having skinned it. To be of any use it seems that the bird has to be roasted and eaten, feathers and all!! Other Cuckoos are also shot for medicinal uses, but are not so highly prized as this species.

The eggs of the Little Cuckoo are said to be found in the nests of *Cettia cantans,* and to be of a uniform chocolate-brown colour.

54. HIEROCOCCYX FUGAX (Horsfield). Amoor Cuckoo.

Hierococcyx hyperythrus Seebohm, B. Jap. Emp. p. 171.

Jap.: Ju-ichi.

As far as I could ascertain, this bird reached the slopes of Fujiyama about May 24th, from which date it became tolerably common. The Japanese name *Ju-ichi* is supposed to resemble the bird's call.

55. ALCEDO ISPIDA BENGALENSIS (Gm.). Indian Common Kingfisher.

Alcedo ispida bengalensis Seebohm, B. Jap. Emp. p. 175.

Jap.: Kawa-semi.

On May 23rd two of these birds were observed on Shoji Lake, where they were probably breeding.

56. CYPSELUS PACIFICUS (Lath.). Siberian Swift.

Cypselus pacificus, Seebohm, B. Jap. Emp. p. 177.

Jap.: Nairi-tsubame.

The first time I observed this Swift was near Kioto on May 4th, when a single example passed overhead; the only other specimens seen in Japan were two or three flying across Lake Kawaguchi on the 23rd. In Vladivostock, where the species was remarkably common, it struck me as having very similar habits to *C. apus,* but it is a much more silent bird and is more sparing of its scream-like cry.

The Japanese collector told me that the larger Needle-tailed Swift (*Chætura caudacuta*) breeds every year in the precipitous parts of Fuji, late in the month of July. Mr. Owston also informed me that a colony nests by the waterfall near Chuzenji, where the birds may be seen entering the crevices formed by the strata. When I visited the place, during the second week in May, none of these interesting birds were to be seen, but it was doubtless then too early in the year for them

57. CAPRIMULGUS JOTAKA Temm. & Schl. Japanese Nightjar.

Caprimulgus jotaka Seebohm, B. Jap. Emp. p. 178.

Jap.: Yotaka.

This bird was common round Subashiri, and from twilight onwards through the night its peculiar notes could frequently be heard. This cry has been likened, with some truth, to the sound produced by a pebble being rapped smartly on a sheet of ice—a sharp, resonant *chook, chook, chook,* uttered several times in quick succession. Three pairs of eggs were taken in the neighbourhood on May 26th and June 3rd and 4th respectively. The first two eggs (taken by myself) were deposited on a small bare patch of black ground, under the shelter of some pine-trees. Owing to the light colour of these eggs, when uncovered, they shewed very distinctly against the dark background and consequently displayed a dangerous lack of protective coloration.

When returning to the eggs the bird approaches from a distance and, with gliding flight, goes straight and unhesitatingly to the spot. I observed that the female while incubating kept her large eyes nearly closed. Did she object to the bright light of the sun or was it done for the sake of better concealment? Of course, in nature, it must be remembered eyes are often the first means of betraying the presence of an otherwise inconspicuous creature and by screening these bright parts assimilation would be greatly enhanced.

The eggs resemble light varieties of those of *C. europæus.* Average size 1·28 × 0·89 in.

58. ASIO OTUS (Linn.). Long-eared Owl.

Strix otus Seebohm, B. Jap. Emp. p. 186.

Jap.: Tora-fu-dzuku.

When at Subashiri two white eggs, undoubtedly belonging to this species, were brought to me on May 15th. Measuring 1·6 × 1 3 in., they agree perfectly with European examples.

59. Milvus ater melanotis (T. & S.). Black-eared Kite.

Milvus ater melanotis Seebohm, B. Jap. Emp. p. 197.

Jap.: Tombi.

This scavenger is remarkbly plentiful in many parts of the Empire and particularly about the larger towns and seaports. In the harbours numbers may be seen circling over the shipping, intent upon gathering any refuse that may fall into the water. At Tsuruga I once counted as many as thirty congregated together and sitting listlessly upon a small strip of beach. These birds had doubtless just been gorging themselves, which would explain their extreme lethargy. In the mountain districts this Kite becomes less common and in some places it is rarely seen. As it is an early breeder, I was too late to procure any eggs.

60. Nycticorax nycticorax (Linn.). Night-Heron.

Nycticorax nycticorax Seebohm, B. Jap. Emp. p. 222.

Jap.: Seguro-goi.

On several occasions during May I saw isolated examples of this species, principally in the neighbourhood of Kioto and Lake Biwa.

61. Ardetta sinensis (Gm.). Oriental Little Bittern.

Botaurus sinensis Seebohm, B. Jap. Emp. p. 227.

Jap.: Yoshigoi.

Met with commonly in the reed-beds of Suzukawa and near Lake Yamanaka.

62. Larus crassirostris Vieill. Black-tailed Gull.

Larus crassirostris Seebohm, B. Jap. Emp. p. 293.

Jap.: Umineko.

I observed a few while voyaging between Nagasaki and Yokohama.

63. Larus ridibundus Linn. Black-headed Gull.

Larus ridibundus Seebohm, B. Jap. Emp. p. 295.

Jap.: Yuri-kamome.

Seen sparingly on the Inland Sea and elsewhere in Japanese waters.

64. ÆGIALITIS DUBIA (Scop.). Little Ringed Plover.
Charadrius minor Seebohm, B. Jap. Emp. p. 306.
Ægialitis curonica Dresser, Man. Pal. B. p. 740.
Jap.: Chidori.

Several pairs of this species were inhabiting the beach at Suzukawa along with the Kentish Plovers, and were also undoubtedly nesting by June 1st. They were obviously masters of the latter, for whenever any of the Kentish Plovers flew over their ground they would be sure to set upon them and drive them away.

65. ÆGIALITIS PLACIDA (Gray). Hodgson's Ringed Plover.
Charadrius placidus Seebohm, B. Jap. Emp. p. 307.
Jap.: Ikaru-chidori.

I first met with this species on the Katsuragawa, near Kioto, about thirty miles inland. This was on May 3rd, and the birds were then shewing unmistakable signs that they were about to commence nidification, but several hours' watching convinced me that the eggs had not yet been deposited. The male was frequently courting the female, and during the process was making repeated excursions into the air, flying in a peculiar way and emitting a kind of love-cry, the whole performance being very like that of *Ægialitis dubia* when similarly occupied. The next time I met with Hodgson's Plover was on June 8th, at Gifu, when I found young on the shingle of the River Nagara, also about twenty-five miles from the coast. As this species was absent from the beach at Suzukawa, where *Ægialitis dubia* and *Æ. alexandrina* were both common, and where I fully expected to find it, it is only reasonable to presume that, during the breeding-season at any rate, it is much more of an inland species than either of those birds.

66. ÆGIALITIS ALEXANDRINA (Linn.). Kentish Plover.
Charadrius cantianus Seebohm, B. Jap. Emp. p. 309.
Ægialitis cantianus Dresser, Man. Pal. B. p. 737.
Ægialitis alexandrina Sharpe, Hand-l. B. i. p. 154.
Jap.: Shiro-chidori.

The only district I visited in which there was a locality adapted to the requirements of this species was Suzukawa, on the Bay of Suruga. Here the Kentish Plover was to be found quite commonly along the great stretch of beach known as Tagono-ura, and I believe it is plentiful in many parts of Japan. Although I devoted the whole morning of June 1st in searching for eggs, I did not succeed in finding more than one, and this apparently had only just been laid. It was placed in a shallow "scrape," round which was a piece of old rope, half buried in the sand. This egg is indistinguishable from European examples.

67. HETERACTITIS BREVIPES (V.). Grey-rumped Sandpiper.

Totanus incanus brevipes Seebohm, B. Jap. Emp. p. 323.

Heteractitis brevipes Sharpe, Hand-l. B. i. p. 161.

On the stony shore of Lake Kawaguchi I saw two birds on May 23rd which I identified as belonging to this species; these were the only examples observed during my visit to Japan. The birds in question betrayed no signs of nesting, and I believe they were merely wanderers.

68. TRINGOIDES HYPOLEUCUS (Linn.). Common Sandpiper.

Totanus hypoleucus Seebohm, B. Jap. Emp. p. 326.

Tringoides hypoleucus Sharpe, Hand-l. B. i. p. 161.

The Common Sandpiper is found on the banks of many of the mountain-streams, and is by no means rare.

69. GALLINAGO AUSTRALIS (Lath.). Australian Snipe.

Scolopax australis Seebohm, B. Jap. Emp. p. 342; Ingram, Bull. B. O. C. vol. xxi. p. 18.

Jap.: Ojishigi.

(Egg, Pl. IV. fig. 4.)

This Snipe was tolerably plentiful on the open grassy slopes of Fujiyama, where I was fortunately able to observe its breeding-habits. In such localities the birds' presence could not very well be overlooked, owing to the very remarkable sounds produced by them during their aerial evolutions, which in some respects were analogous to those indulged in by other members of the genus. About the middle of May (and doubtless from an earlier date) these were being performed throughout the greater part of the day, and it was unusual if one could not observe two or three birds overhead at the same time. Like most avine sounds, the peculiar noise made by this species is almost impossible to be described on paper.

As this Snipe quarters the sky in wide sweeps, it gives utterance to a very curious rasping sound, which is increased in volume and considerably changed as the bird suddenly dives downward preparatory to "drumming." The first of these discordant cries is a harsh, grating *khha, khha, khha,* and is being constantly repeated during the roundabout flight; but when the bird is about to make its downward swoop this is altered to a still stranger utterance—a curious *kee-oow, kee-oow,* a sound which I can only liken to the sucking noise sometimes produced by water passing through the narrow waste-pipe of a bath.

The "drumming" of this species does not differ materially from that of *G. gallinago,* but the "swishing" sound is perhaps louder, and on the whole it is less like the bleating of an animal. I believe that both sexes take part in the performance.

Owing to a mistake, the only clutch of eggs in my collection (with the bird shot at the nest) was brought to me on May 19th, and I was deprived of the pleasure of actually taking it myself, although the site of the nest was subsequently pointed out to me. But later on I was fortunate enough to find young birds on two separate occasions. Taking into consideration the habits of its allies, the breeding-ground selected by this Snipe is very remarkable. For instance, I found newly-hatched and almost helpless young on the perfectly dry mountain-side, at least a mile and a half from the nearest water, which was in the form of a torrential stream, and apparently never visited by these birds. The ground in question, being composed largely of porous cinders and ashes (deposited during the comparatively recent volcanic disturbances), dries up with astonishing rapidity even after a heavy downpour of rain. It is therefore very difficult to understand how these Waders obtain their nourishment, the nearest marsh-land or soft ground being many miles distant.

For a usually shy species, the parents display much concern when their progeny are in danger. In one case, on June 6th, while I was handling a young bird three-parts grown, the female remained fluttering in the grass within a few paces of me, feigning disablement, and uttering harsh cries of distress, and seemingly quite regardless of her own safety. I fancy this Snipe will remove its young if they have been disturbed in any way, like a Woodcock, and the Japanese collector declared that he had proved this to be the case. Certainly the two apparently helpless young birds that I found myself on May 26th disappeared in a very mysterious manner. After having carefully examined them, I turned my attention for a short time to another nest. Returning to the spot five or ten minutes later, I failed to find either of them again, although a very careful search was instituted. Now considering the ground for some distance round was tolerably bare of vegetation, their disappearance could, I think, only be explained by the fact that they had been removed by one of their parents.

The eggs in my collection are not unlike those of *G. gallinago*. They have a greenish-buff ground-colour, and are sparsely blotched, chiefly round the larger end, with pale greyish underlying and dark brown overlying marks. Size 1·6 × 1·2 in.

70. SCOLOPAX RUSTICULA Linn. Woodcock.

Scolopax rusticola Seebohm, B. Jap. Emp. p. 347.

Jap.: Bota-shigi.

In the summer the Woodcock is seemingly a common species in the non-coniferous parts of the Subashiri woods, for a nest was found on May 17th and, later, three lots of young birds. Returning late on the evening of June 2nd I observed a Woodcock going through that peculiar performance known as "rôding." This crepuscular flight was continued until it was almost quite dark

The clutch of eggs in my possession are typically marked and measure 1·65 × 1·3 in.

71. LIMNOBÆNUS FUSCUS (Linn.). Ruddy Crake.

Crex fusca erythrothorax Seebohm, B. Jap. Emp. p. 357.

Jap.: Hi-kuina.

In the swamps of Suzukawa I flushed a small Crake that doubtless belonged to this species.

72. PHASIANUS VERSICOLOR Vieill. Japanese Pheasant.

Phasianus versicolor Seebohm, B. Jap. Emp. p. 370.

Jap.: Kiji.

Preferring the open scrub to the dense woodlands, this Pheasant is still fairly plentiful in some districts; but it is sadly persecuted by the Japanese peasantry, who surreptitiously shoot it and its congeners at all seasons of the year. A still more reprehensible practice is that of trapping the female on the nest, which, I understand, is invariably done by the fortunate discoverer of the eggs.

Early in the morning and at sundown this bird's powerful crow was frequently heard in the neighbourhood of Subashiri, from whence I had a clutch of eight eggs brought to me on May 28th. These are light olive-brown, like those of the *P. colchicus*, but measure only 1·69 × 1·27 in.

73. PHASIANUS SŒMMERRINGI SCINTILLANS Gld. Hondo Copper Pheasant.

Phasianus sœmmerringi scintillans Seebohm, B. Jap. Emp. p. 371.

Jap.: Yamadori.

I did not meet with this species in a wild state, but had ten eggs brought to me on May 27th that without doubt belong to this Pheasant. The nest, I was informed, was found in the forest about three thousand feet above sea-level. These eggs measure 1·72 × 1·3 in., and are of a rich cream-colour.

74. COTURNIX JAPONICA. Japanese Quail.

Coturnix communis japonica Seebohm, B. Jap. Emp. p. 373.

Jap.: Uzura.

I found the Quail a common species on the grassy slopes of the northern face of Fujiyama. By the beginning of June the birds had paired, but they apparently had not commenced to lay their eggs, as I found on dissecting a female that I shot. When flushed, two birds would nearly always rise together, shewing that the sexes keep in very close proximity at this season. The call of the Japanese Quail in no way resembles the melodious *whit, whit* of *C. communis,* and is a harsh, unmusical cry, impossible to express on paper.

EXPLANATION OF PLATE IV.

Fig. 1. Egg of *Phylloscopus coronatus*, p. 142.
2, 3. ,, *Geocichla varia*, p. 132.
4. ,, *Gallinago australis*, p. 165.
5. ,, *Xanthopygia narcissina*, p. 140.
6. ,, *Larvivora cyane*, p. 137.
7 ,, *Parus varius*, p. 147.
8, 9. ,, *Emberiza yessoensis*, p. 155.
10. ,, *Urosphena squamiceps*, p. 144.

VI.—*Obituary.* Mr. Howard Saunders, Dr. Rudolph Blasius, and Professor Nation.

1. Mr. Howard Saunders.—It is seldom that the Members of our Union—and, above all, the Editors—have to deplore the loss of so well-tried and trusty a friend as their late Secretary, Mr. Howard Saunders, whose death will be acutely felt, not only by his friends in England and abroad, but by many a London scientific society. Noted as a traveller and an ornithologist he was a conspicuous figure among the zoologists of the Metropolis, and his writings, marked as they were by exceptional care and accuracy, will serve as a model for many future generations. He spared no pains to make his own work as perfect as possible, and was never known to refuse his aid, in the interests of science, to those occupied in similar pursuits, while his various activities were only terminated by his death, which occurred at his London residence, 7 Radnor Place, W., on

October 20th, at the age of 72 years, after a long illness borne with the greatest fortitude.

The son of Alexander and Elizabeth Saunders, he was born in London on Sept. 16th, 1835, and received his early education at Leatherhead and Rottingdean, subsequently to which he entered the office of Anthony Gibbs & Sons, merchants and bankers in the City. The foreign associations of that well-known firm soon caused his thoughts to turn in the direction of South America, and, being naturally of an adventurous and energetic disposition, in 1855 he determined to leave England, on a journey to Brazil and Chile. In 1856 he rounded Cape Horn on the way to Peru*, where he resided continuously until 1860. That country offered to an explorer, and particularly to an ornithologist, magnificent opportunities of which Saunders was not slow to avail himself, while, not content with these, he occupied his time to a considerable extent with antiquarian researches in the interior. On quitting Peru he crossed the Andes, struck the head-waters of the Amazon, and descended that river to Pará, the journals kept during this notable expedition enabling him in 1881 to contribute to 'The Field' a series of articles entitled "Across the Andes." The revolutionary spirit of many towns in South America at that epoch constituted a very serious danger, in addition to the usual risks of a wild and little-known country, but Saunders's courage was by no means the least characteristic of his qualities.

In 1862 he returned to England, but only to devote most of his time until 1868 to the investigation of the Avifauna of Spain, a subject on which he soon became our recognised authority. Articles from his pen referring to this part of his career will be found in 'The Ibis' for 1869, 1871, 1872, and 1878; while he wrote in a more popular style for 'The Field' in 1874 his "Ornithological Rambles in Spain and Majorca." In 1868 he married Emily, the daughter of Mr. William Minshull Bigg, of Stratford Place, and took up his residence in England; but he still found time to continue his continental expeditions, the results of which are incorporated in papers to 'The Ibis' on the birds of the Pyrenees in 1883–4 and those of Switzerland in 1891, while in 1893 these were followed by an account of "The Distribution of Birds in France."

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* His first contribution to 'The Ibis' was on the Albatrosses noticed on this voyage ('Ibis,' 1866, p. 124).

Saunders was an active Member of the Zoological, Linnean, and Royal Geographical Societies, and was in much request as a Member of Committees and Councils; he was a Vice-President of the first-named and in close touch with the Gardens at Regent's Park, where he took a strong interest in the animals and their management. He was elected a Member of the British Ornithologists' Union in 1870, and in 1901 entered upon the office of Secretary, a post which he held till his death. He was also the first Secretary and Treasurer of the British Ornithologists' Club, when that offshoot from the parent stem was founded in 1892. The fifth and seventh series of 'The Ibis' were issued under his editorship, conjointly with Sclater; while from 1877 to 1881 he acted as the Recorder of "Aves" for the 'Zoological Record,' and from 1880 to 1885 as Secretary of Section D (Zoology) at the meetings of the British Association. In 1884 he edited Vieillot's 'Analyse' for the Willughby Society, and during his whole career in England he was a regular reviewer of books on Natural History, Sport, and Travel, especially for the 'Athenæum.' A paper on the eggs obtained by the Transit of Venus expedition of 1874–5 appeared in the 'Philosophical Transactions' for 1879, and the portion of the 'Antarctic Manual' referring to the Birds came from his pen in 1901. He was actively concerned in the Bird-Department of the Fisheries Exhibition in London in 1883, while he always kept in close touch with the Naturalists of the United States, where he was an Honorary Member of the American Ornithologists' Union.

Saunders had a world-wide reputation as an authority on the family *Laridæ* (Gulls and Terns), and published important papers on it in the 'Proceedings of the Zoological Society of London' for 1876–8, and the 'Journal of the Linnean Society (Zoology)' for 1878, hence he was naturally selected to write the portion of the twenty-fifth volume of the 'Catalogue of the Birds in the British Museum' which deals with this group. But to the public in general he will always be best known as the Editor, in 1884–5, of the last two volumes of the fourth edition of Yarrell's 'British Birds,' commenced by Professor Newton, and as the author of that most excellent work 'An illustrated Manual of British Birds,' issued in 1889, wherein was included not only the whole essence of 'Yarrell,' but a large amount of fresh information, though two pages only were given to each species. The value of this volume to Palæarctic Ornithologists was speedily made evident by the call for a second edition in 1899, after which date Saunders continued to keep up a constant correspondence with those who recorded additions to the British List, as published by himself in 1887, and the last article from his pen was one dealing with this subject in the new periodical entitled 'British Birds.'

The death of our Secretary will, however, be felt most particularly by his friends and fellow-workers, to whom he was always accessible and whose writings he was invariably willing to revise; in fact the correction of the proofs of others consumed a large portion of his time in later life. Kind and helpful as he was, we cannot end our notice without once more expressing our great sense of the loss that we and others have sustained.

2. Dr. **Rudolph Blasius.**—Although not a member of the British Ornithologists' Union, like his brother Professor Wilhelm Blasius, Dr. Rudolph Blasius was well known in England, so that his friends, who deeply sympathize with the sad loss of this eminent ornithologist, will be glad to have some particulars about his life. Paul Heinrich Rudolph Blasius was born on the 25th of November, 1842, at Braunschweig, the eldest son of the famous Professor of Zoology, Johann Heinrich Blasius († 1870), in his time a prominent authority on palæarctic ornithology and well known by his standard work 'Fauna der Wirbelthiere Deutschlands' (1857), of which unfortunately only the "mammals" ever appeared.

Shortly after taking his degree as Dr.Med., Rudolph Blasius was attached to the Medical Service in the war of 1866 and afterwards in that of 1870/71, when he was promoted to be "Stabsarzt" (Surgeon-Major) and awarded the "iron-cross."

After the last war Blasius left the military service and in 1874 settled in his native city as a physician. Taking Hygiene as his special study, he was elected, in 1879, Professor of this science and of Bacteriology at the Ducal Technical High School (Carolo-Wilhelmina). Although most actively engaged in this line, as well as in literature and in public lectures, Blasius further utilised his position for the benefit of his birthplace by becoming, by the confidence of his fellow-citizens, in 1879, a member of the municipal assembly and later on an alderman of the City.

It is wonderful how Blasius, notwithstanding all these pressing duties, managed to do actual work also in Ornithology, to which, educated in that science when a boy by his father, he was deeply attached. His doctoral dissertation on the structure of the egg-shell * dealt with this science, but he subsequently produced a great number of papers, partly concerning his various travels in many parts of Europe and partly on the subject of migration. When the first International Ornithological Congress was held at Vienna in 1884, under the auspices of Crown-Prince Rudolph of Austria, and a "Permanent International Ornithological Committee" was founded, Blasius was chosen President of this loosely organised institution, and, along with Professor von Hayek of Vienna, edited the new quarterly Journal 'Ornis' until 1891. This periodical contains several papers by Blasius, who also contributed largely to the 'Neue Naumann,' as the new edition of the classical work of the celebrated original author is called. Last, but not least, Blasius was also for many years President of the "Deutsche Ornithologische Gesellschaft" at Berlin, and was always working for the protection of birds and animals in general.

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* 'Ueber die Bildung, Struktur und systematische Bedeutung der Eischale der Vögel' (1866).

Being a constant member or delegate of various Associations and Congresses, Blasius became well acquainted with many scientific men at home and abroad, and was everywhere much esteemed for his joviality and good humour, and as an amiable companion and true friend. Married in 1869 to a congenial, high-born lady (Mally Hausmann), who repeatedly accompanied him in his travels, Blasius enjoyed a most happy and untroubled family life, blessed by four children and a number of grandchildren. Of an excellent constitution, Blasius was by no means of sedentary habits, but liked exercise and sporting, often going deer-stalking and elk-shooting in the woods of Esthonia. All those who met Blasius during the late International Ornithological Congress in London (1905) will remember him as of a type of health which promised undoubted longevity. Scarcely ever previously ill, in the beginning of May last Blasius was struck down by a heavy attack of broncho-pneumonia complicated by pleuritis, but happily recovered. He had intended to join his brother at the end of July in visiting the International Zoological Congress at Boston (U.S.A.), but a relapse interfered with
2/ this plan and ended his life on the ~~3~~1st of September.

Two days before his brother returned from America the funeral of Rudolph Blasius had taken place, and an attendance of all classes proved how much and how deeply the loss of this prominent and deserving citizen was felt. Our science also will not fail to miss him.—O. F.

3. Professor W. Nation, C.M.Z.S.—William Nation was born, of humble parents, in 1826, at Staplegrove, near Taunton in Somersetshire, and brought up as a gardener. In 1840, having passed the necessary examination, he was appointed one of the garden-staff at the Royal Gardens at Kew. Here he remained till 1849, when his good conduct and general knowledge of plants, together with a desire to visit foreign countries, caused him to be sent out to Lima as a plant-collector. After several years of exploration of the rich forests on the eastern side of the Andes, during which he sent many botanical specimens to Europe, Nation

settled at Lima, and was made Professor of Languages and Natural History in the National College at Guadelupe near that city. He also became an active contributor on scientific subjects to one of the leading journals of the Peruvian capital. Having transmitted some living animals to the Zoological Society of London, Nation was elected a Corresponding Member of that Society in 1865, and shortly afterwards commenced a series of communications on the birds of the vicinity of Lima, which he sent to Sclater, at that time Secretary to the Society, along with specimens of the species to which they related. These communications were published in the Society's 'Proceedings' from 1866 to 1885 *. His last communication to the Zoological Society was received in 1890, when he forwarded a small collection of birds' bones obtained from the Peruvian nitrates. In the spring of last year Prof. Nation, being sadly out of health, determined to return to England, but had a rough voyage, and reached his native land, after 57 years' absence, in a very feeble state. Sclater visited him in July last, while he was staying with some relatives at Clapham, and found him slightly improved in health for the time. But this improvement did not last, and he died on October the 19th, at his friends' house, at the age of 81 years. His name is commemorated in Science by two Peruvian birds which he discovered and which Sclater named after him—*Myiobius nationi* and *Pyrgisoma nationi*.

VII.—*Notices of recent Ornithological Publications.*

1. *Balston, Shepherd, and Bartlett on Kentish Birds.*

[Notes on the Birds of Kent. By R. J. Balston, C. W. Shepherd, and E. Bartlett. London: R. H. Porter, 1907. Pp. i–xx, 1–465; with nine plates and a map.]

It is somewhat difficult to give a correct idea of the contents of this volume, which we hail with pleasure as the first attempt to write a systematic account of the

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* See P. Z. S. 1866, p. 96; 1867, p. 340; 1869, p. 146; 1871, p. 496; 1881, p. 484; and 1885, p. 277.

Birds of the whole county. On the one hand, we have here much more than the stray notes on Ornithology which the title might seem to imply, and much information from various quarters has been incorporated in the text ; on the other hand, the book reads somewhat like a work on British Ornithology generally, with records for Kent in the foreground. Many pages are devoted to accounts of the habits of our commoner species which would certainly find no place in a manual on the birds of the county proper ; and the records themselves, while given, as is fairly stated, for what they are worth, are not sifted for the reader, but are left to his own discrimination and judgment. The Introduction furnishes us with an account of the general physical features of the Kentish country, which may be of value in the future if the coal-fields are opened up successfully and spoil the scenery ; and the occurrences of certain rare birds are recorded, with coloured plates of eight of them by Smit, namely, the White-spotted Bluethroat, the Dartford Warbler, the Masked Shrike, the Crossbill (jr.), the Lesser Kestrel, the Kentish Plover, the Avocet, and the Sandwich Tern. Of especial interest are the accounts of the breeding of the Golden Oriole, Chough, Stone-Curlew, Garganey, and several other uncommon species, while we notice with pleasure the constant recurrence of the names of our fellow-members Dr. N. F. Ticehurst and Mr. M. J. Nicoll in connexion with the records from the Dungeness district.

2. *Bertoni on Birds from Paraguay.*

[Contribucion para el conocimiento de las Aves del Paraguay, por A. de Winkelried Bertoni. An. Cient. Paraguayos, No. 3. Asuncion, 1904.]

This is a series of short notes on the birds of Paraguay, which was only received in August last, though apparently published in 1904. The most interesting species is, perhaps, *Gisella iheringi* (Sharpe), which, however, seems to be nearly the same as *G. harrisi* (Cass.).

3. *Blackwelder and Richmond on Birds from China.*

[Research in China. Expedition of 1903–4, under the direction of Bailey Willis. Report on Zoology, by Eliot Blackwelder. Carn. Inst. of Washington. Vol. i. pt. ii. Washington, D.C., 1907.]

This is the zoological portion of the report of an expedition sent out by the Carnegie Institution of Washington (1903–4) to China. The collection of birds, containing examples of 49 species, has been studied by Dr. Charles W. Richmond, and the specimens have been deposited in the U.S. National Museum. They are now enumerated and short field-notes are attached to most of them. *Ibidorhynchus struthersi* was met with in the mountain-valleys of Chi-li and Shan-si. *Olbiorchilus fumigatus idius* is a new subspecies from Shantung and Chi-li. Coloured figures are given of *Calandrella brachydactyla dukhunensis, Olbiorchilus fumigatus idius, Pericrocotus brevirostris, Buchanga leucogenis, Pardaliparus venustulus, Emberiza castaneiceps,* and *E. yunnanensis.*

4. *Bulletin of the Imperial Academy of Sciences of St. Petersburg.*

[Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg. V^e^ Série. Classe Physio-Math. Vols. xxii. (1905), xxiii. (1905), xxiv. (1906).]

These three volumes, of which we have lately received copies, contain four ornithological papers by Dr. Bianchi to which attention should be called, although, from their being written in Russian, we can give very little information about them. The first (vol. xxii. p. 37) relates to the genera *Leptopœcile* and *Lophobasileus*; the second (vol. xxiii. p. 41) to "*Kaznakowia,*" which appears to be a new generic name for *Babax weddelli* of Dresser; the third (xxiii. p. 49) to the species of *Cryptolopha, Abrornis,* and *Tickellia,* of Central Asia; and the fourth (vol. xxiv. p. 83) to a new species of Pheasant (*Phasianus suchschanensis*) from Western China. While we cannot complain of authors employing their own language if they prefer it, we think that it would be advisable that such papers as these, which are of interest to zoologists all over the world, should be accompanied by short abstracts of their contents written either in Latin or in one of the familiar languages of Western Europe.

5. *Chapman on the Warblers of North America.*

[The Warblers of North America. By Frank M. Chapman, with the Co-operation of other Ornithologists. New York: Appleton & Co., 1907.]

The Wood-Warblers (Mniotiltidæ) are one of the most characteristic families of the Nearctic Region, extending in a subdued form far into the Neotropical, but not met with, except, possibly, as very rare stragglers, anywhere on this side of the Atlantic. No group of North-American Passeres exceeds the Wood-Warblers in their elegant forms and brilliant colours. They consequently form a most attractive subject for an illustrated Monograph, such as Mr. Chapman gives us in the present volume.

The work is commenced by well-written essays on the general characters of the group, their distribution, migration, songs, nesting-habits, and mortality, the mortality being alleged to be "higher than that which prevails in any other family of American Birds." Besides other unfortunate circumstances, the Warblers are apparently much harassed by the Cow-birds, which are especially prone to select them as foster-parents. It is not unusual, we are told, to find three Cow-bird's eggs in one nest of a Warbler. Moreover, the poor Warblers often have to bring up the Cow-birds instead of their own legitimate children.

In the systematic order and nomenclature of his chosen group Mr. Chapman naturally follows Mr. Ridgway, and divides the Mniotiltidæ found north of Mexico into 16 genera and 55 species. Nineteen subspecies are also recognised. These are all taken in order, and their distribution, haunts, and nesting and other habits are fully described. The curious subject of the intermediate forms between two distinct species of *Helminthophaga* (*H. chrysoptera* and *H. pinûs*) is fully discussed.

The volume is furnished with twenty-four coloured plates, which illustrate every species, besides photographic prints of nests and eggs. The figures of the birds are much reduced in size, so that four or five, or even six, are placed in each plate. They are accurately drawn and sufficiently coloured to enable the species to be recognised at a glance, although in some cases they might perhaps have been a little brighter. Altogether our Foreign Member has produced a charming volume, which, although of course primarily adapted for his American friends, will be much admired by his ornithological associates in England and elsewhere.

6. '*The Condor.*'

[The Condor, a Magazine of Western Ornithology. Edited by Joseph Grinnell. Vol. ix. nos. 1–5, 1907.]

'The Condor' is still "wide-awake," and we find much that is of interest to us in its pages, while some of the photographs are excellent. That of a group of Pelicans in which the young one is poking its head down the parent's gullet in quest of food is very good. The Cormorant has been figured feeding its young in exactly the same way. In the barrancas of Patagonia, near the mouth of the Rio Gallegos, Mr. S. Adams, while prospecting for fossils, found the nest of a Condor-bird (*Sarcorhamphus gryphus*), and, as in duty bound, sends a description and figure of it to the 'Condor' Journal. We are not aware that it has been previously described, or at any rate figured. The picture of the young Californian Jay (*Aphelocoma californica*) in no. 5 is likewise excellent, as is also that of the four young Screech-Owls in the same number. Mr. Clemens, who writes from the shores of Lake Lanao, in the interior of Mindanao, Philippines (2700 ft. alt.), has obtained a specimen of the great monkey-eating Forest-Eagle described by Mr. Ogilvie-Grant as *Pithecophaga jefferyi* (Bull. B. O. C. vi. p. xvii), and sends a photograph of the living bird. A half-digested monkey was found in its stomach, so that the bird justifies its name.

7. *Dresser on Palæarctic Birds' Eggs.*

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser. Parts IX., X., pp. 289-360, 8 pls. London: October 1907.]

In these parts the letterpress of Mr. Dresser's work is continued from the genus *Lanius* to *Loxia*, and includes certain Shrikes, the Waxwing, the Flycatchers, Swallows, and Finches in general. The eggs figured are those of *Fringilla*, *Linota*, *Carpodacus*, *Erythrospiza*, *Bucanetes*, *Uragus*, *Pyrrhula*, *Pinicola*, *Loxia*, *Emberiza*, *Calcarius*, *Plectrophanes*, *Certhilauda*, *Otocorys*, *Melanocorypha*, *Alauda*, *Galerita*, *Ammomanes*, *Calandrella*, *Montifringilla*, *Cypselus*, *Dendrocopus*, *Acanthyllis*, *Picoïdes*, *Iynx*, *Alcedo*, *Merops*, *Upupa*, and *Alca impennis*. All these figures come out particularly well, while the two eggs of the Great Auk, from the Chapncy Collection, are light-coloured specimens with very rufous markings. The eggs of the Chaffinch, Lesser Redpoll, Cirl Bunting, and Wood-Lark strike us as particularly good, but all are much on the same level of execution, though the darker blue specimens come out rather less clearly.

8. '*The Emu.*'

[The Emu. A Quarterly Magazine to popularize the Study and Protection of Native Birds. Vol. vii. pts. 1, 2. Melbourne, 1907.]

These two parts of our contemporary are chiefly devoted to papers on the birds of special localities; but one article at least is of a more general character, namely, that by Mr. A. H. Mattingley on the Heronries at Mattoura, Riverina, New South Wales. Here the author, in company with Mr. J. Ross, took the first recorded eggs of *Mesophoyx plumifera*, besides those of other uncommon species; while in a second communication he deplores the terrible destruction wrought by the plume-hunters, and gives illustrations of the starving young.

Mr. W. H. D. Le Souëf takes us afield to Japan in his account of the nesting of *Chætura caudacuta*, while Messrs.

G. P. Hill, R. Hall, T. B. Austin, and Miss J. A. Fletcher begin or continue their notes on the birds of the Ararat, Townsend River, Talbragar River, and Wilmot districts respectively, the last-named place being in Tasmania.

Mr. F. L. Berney writes on the food of birds, as found in a series of their stomachs, Mr. J. Batey on the Avifauna of a part of the Melbourne district in the early part of the nineteenth century, Mr. G. Horne characterizes a new variety of *Zosterops* (near *Z. cinerea*) as *Z. bowiæ*; and an unnamed author describes a trip after bear and walrus to the North Pacific, in a paper which seems to have little or no connexion with Ornithology.

9. *Haines on the Birds of Rutland.*

[Notes on the Birds of Rutland. By C. Reginald Haines. London: R. H. Porter, 1907. Pp. i–xlvii, 1–175.]

Mr. Haines has given us, in this book, an account of all that is known of the birds of his county, and has carried out his plan with great judgment. The volume is small, yet contains everything that is necessary in a local Avifauna. The author is careful to inform us of the authority on which each of his records rests, while he has taken considerable trouble to collect them from former as well as from present sources. Rutland is a small county, and perhaps will never afford material for a very large work; but we hope that Mr. Haines will find his facts accumulate in the future to a sufficient extent to publish a second and more elaborate edition. Many of the species have at present to be included on the evidence of gamekeepers and taxidermists—a state of things which will, no doubt, be altered as time goes on, and we think that square brackets might have been used more freely in certain cases. The articles on the Raven, Little Owl, and Bonaparte's Gull are of particular interest, but we do not believe that Lord Lilford intended to guarantee the story of the nesting of the Bee-eater, though he certainly gave the details obtained from Mr. A. C. Elliot when writing of the Birds of Northamptonshire.

10. *Hartert's Notes on African Birds.*

[Notes on African Birds. By Dr. Ernst Hartert. Nov. Zool. xiv. p. 484 (1907).]

Several large African collections of birds have lately been received at Tring, but, owing to the pressure of other work, have not yet been thoroughly studied. Dr. Hartert now reviews the species of *Textor* and other Weavers, and describes *Plocepasser mahali ansorgei*, *Malimbus malimbica melanobrephos*, and *Ploceus ocularius po* as new. He is of opinion that too many genera of Ploceidæ are usually recognised, in which we are quite disposed to agree with him.

11. *Hellmayr on Birds from the Rio Madeira, Brazil.*

[On a Collection of Birds made by Mr. W. Hoffmans on the Rio Madeira, Brazil. By C. E. Hellmayr. Nov. Zool. xiv. no. 2, p. 343 (1907).]

Mr. Hoffmans (see 'Ibis,' 1907, p. 491) lately made an expedition to the Rio Madeira, and collected birds at several places on its banks. Mr. Hellmayr has worked out the results in his usual careful and methodical manner.

The specimens are referred to 197 species and subspecies, of which *Cypsnagra ruficollis pallidigula*, *Nemosia flavicollis centralis*, and *Rhamphocænus melanurus amazonum* appear to be now described for the first time. A beautiful plate, drawn by Keulemans, illustrates *Anoplops melanosticta* and *A. hoffmansi*. The collection is very rich in Pipridæ and Formicariidæ. Of the former family it contains good series of the splendid *Pipra nattereri* and *Chiroxiphia regina*, and an adult male of *Neopipo cinnamomea*.

A few more synonyms would have been desirable in the case of some of the species the familiar names of which have been recently altered, e. g., *Myospiza manimbe* and *Deconychura longicauda*. Nor is it correct to call a species "*Granatellus pelzelni pelzelni* Scl." Sclater maintains that he is quite guiltless of having coined such an objectionable compound, and regrets that his name should have been attached to it.

12. *Herman on Bird-Protection in Hungary.*

[The International Convention for the Protection of Birds, concluded in 1902; and Hungary. Budapest, 1907. Pp. i–viii, 1–241.]

This work, which the Hungarian Minister of Agriculture has now ordered to be published in English, is written by Herr Otto Herman, and gives the history of the continental movement for the Protection of Birds and of the progress made hitherto.

After a preliminary meeting of German farmers and foresters in 1868, the matter was taken up by Ministers in Hungary and Austria; they subsequently referred it to their diplomatic representatives, who reported favourably of the attitude of Italy, Switzerland, and France. But further negotiations shewed that the people of Italy were unwilling to follow the lead of their Government. The subject was again raised at the International Economic Congress at Vienna in 1873, when lists were actually brought forward of useful and noxious species, and a formal declaration was issued of agreement between Austria, Hungary, and Italy. A protocol was also drawn up requesting the co-operation of other countries, to which France and Switzerland replied satisfactorily, while Germany and Belgium preferred to wait until a decision had been definitely arrived at upon the lists of useful and noxious birds.

As it happened, the first International Ornithological Congress met at Vienna in 1884, and subsequently the second at Budapest in 1891, at both of which Bird-Protection was further discussed, while finally the third International Congress took place at Paris in 1895. Schedules of species were then drawn up, and matters of all kinds thoroughly discussed, after which differences of opinion arose and Great Britain, Holland, Russia, and Italy withdrew their representatives. Several years were taken to arrange conditions agreeable to the various countries, and finally in 1906 the Convention for Protection of Birds became an accomplished fact, and the signatories were Austria, Hungary, Germany, Belgium, Spain, France, Greece, Luxemburg, Monaco, Portugal, Sweden, Norway, and Switzerland.

Mr. Herman gives an introduction to the volume on Birds as found in nature, and adds a further section on the protection given to them in Hungary. But while cordially agreeing with our friends abroad in every effort to preserve birds, we do not consider that new methods are necessary in Britain, where, under the present regulations, few of the smaller birds are in risk of extermination, and the larger species already receive their due meed of protection if not economically injurious. Our endeavours are not always successful, but the result would probably be the same under the Continental rules, if adopted.

13. *Loudon on the Birds of the Semirechinsk Province.*

[Ueber N. A. Sarudny's und B. P. Korejew's 'Die ornithologische Fauna des Semiretschje-Gebietes.' Von H. Baron Loudon. Orn. Jahrb. 1907.]

This is a notice, prepared by Baron Loudon, of an important paper, written in Russian by MM. Sarudny and Korejew, upon the birds of the Province of Semirechinsk, in Western Siberia, which lies south of Lake Balkash. It is mainly based upon a large collection of skins made by M. Korejew during his military service there in 1899–1900. The specimens are referred to 305 species, the names of which (only) are given in Baron Loudon's abstract. There are several (to us) new names in the List, e. g. *Merula relicta* and *Cyanecula pallidogularis.*

14. *Martorelli on Rare Birds in Italy.*

[Di alcune nuove appararizioni di Uccelli migratori Siberiani ed Americani, e della influenza del moto rotatorio della terra sulla direzione generale delle migrazioni: nota ornitologica del socio Prof. Giacinto Martorelli. Atti Soc. It. Sc. Nat. vol. xlvi. 1907.]

The additions to the Avifauna of Italy recorded in the present paper are *Branta nigricans* of North America and *Lanius borealis* of Siberia. Of the former species two specimens were obtained near Mantua in 1906, to which a third was subsequently added from Ospedaletto. Of the latter an example in the flesh was purchased in the bird-market of Milan in 1889. Prof. Martorelli knows well that there are differences of opinion among ornithologists as to the validity of both these species, and discusses them at full length. He then devotes several pages to a disquisition on the cause of these and other visitants coming from remote parts of the earth's surface, and how far their migrations may be influenced by the rotatory motion of the earth.

15. *Neave on the Birds of North-east Rhodesia.*

[(1) A Journey to North-east Rhodesia during 1904 and 1905. By S. A. Neave. Mem. Manch. Phil. Soc. vol. 51, pt. 2. Manchester, 1907.

(2) On a Collection of Birds from N.E. Rhodesia. By S. A. Neave. Mem. Manch. Phil. Soc. vol. 51, pt. 3. Manchester, 1907.]

We have already called attention (see 'Ibis,' 1906, p. 740, and 1907, p. 223) to Mr. Neave's travels in North-eastern Rhodesia in 1904–5 as Naturalist to the African Geodetic Survey. The first of these papers gives us an exact account of his routes in Rhodesia, and the second the results of his researches, so far as regards the Class of Birds.

Mr. Neave's winter-quarters during the rains of 1904–5 were at Petauke, the Chartered Company's most western station in the East Loangwa district, which is called a "charming spot." At other times Mr. Neave seems to have traversed the greater part of the southern half of North-eastern Rhodesia, though there is no map attached to his report to shew his exact routes, and many of his localities are not to be found in any Atlas. The great feature of this part of Rhodesia is the enormous valley of the Loangwa, one of the principal affluents of the Zambesi, which traverses the whole Province from N.E. to S.W. Mr. Neave describes the "three rather distinct types of country" met with as follows:—

"(1) The low country up to 3000 feet, such as is found in the valley of the Loangwa and of the Zambesi at the point where the former river joins it. This is characterized by patches of typically tropical vegetation; by areas of more or less dense thorn scrub; by sandy flats covered with 'Copaifers mopani' trees, varied by small open spaces, but remarkable for the absence of undergrowth.

"(2) The country from 2000–3000 feet is mainly of a broken and hilly character, and a large part of it, including nearly all the hills, are covered with a thin woodland. Large timber is not usually met with, except on the banks of streams. Here and there are open spaces, locally known as 'damtos,' covered in the rainy season with immensely tall grass.

"(3) Above 3000 feet the woodland is of similar character, but less in extent, the open grassy spaces being markedly larger. Here and there in places granite kopjes may be seen. On the high plateau towards the Kafue parts of the country exhibit the well-known park-like character so often described by African travellers. There are also patches of dense jungle, mainly composed of evergreen trees, and usually found on the banks of streams."

The specimens of birds collected by Mr. Neave are referred to 217 species, which are catalogued according to Dr. Bowdler Sharpe's 'Hand-list,' with references to Dr. Reichenow's and Mr. W. L. Sclater's works and other authorities. Unfortunately, there are very few introductory remarks given to shew us the general character of the Avifauna, but it is obvious, on looking through the list, that a large proportion of the species belong to South-African forms, intermixed with a few from Nyasaland. Two species are described as new—*Cisticola stoehri* and *Hypochera codringtoni*—and are figured on a coloured plate. The charming little Love-bird *Agapornis lilianæ* was met with "sparingly, in flocks, on the Loangwa." *Coracias spatulatus* was obtained at Petauke. The field-notes attached to each species are numerous, but very brief.

It must not be forgotten that another large collection of birds was made by Dr. Stoehr (of the Geodetic Survey) in N.E. Rhodesia for the S. African Museum, and was described by Dr. Stoehr and Mr. W. L. Sclater in the 'Journal of the S. African Ornithologists' Union' in 1906 *.

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* See their "Notes on a Collection of Birds made in North-east Rhodesia," Journ. S.A. Orn. Union, vol. ii. p. 83 (1906).

16. *Nelson on the Birds of Yorkshire.*

[The Birds of Yorkshire. Being a Historical Account of the Avifauna of the County. By T. H. Nelson, with the Co-operation of W. Eagle Clarke and F. Boyes. London: A. Brown & Sons, 1907, and at Hull and York. 2 vols., 8vo.

The long-felt want of a comprehensive book on the Birds of Yorkshire has at last been met by the issue of the two stout volumes before us, the work of Mr. T. H. Nelson, with the co-operation, as will be seen from the title, of Messrs. Eagle Clarke and F. Boyes. Since Thomas Allis wrote his MS. Report "On the Birds of Yorkshire" in 1844, many enthusiasts have worked at the ornithology of the county, one of the chief among them being the late J. Cordeaux; while in 1881, Mr. Clarke, who had commenced a monograph in the 'Transactions of the Yorkshire Naturalists' Union,' contributed a list of species to the 'Handbook of the Vertebrate Fauna of Yorkshire.' On his departure to Edinburgh, however, he found himself unable to continue the undertaking, and it was thought advisable to publish an entirely fresh account of the county Avifauna, as an exceptional mass of material had gradually accumulated for some thirty-five years. The task was entrusted by the Yorkshire Union to our fellow-member Mr. Nelson, whose long residence in the shire has enabled him to add largely to the information originally gathered by Messrs. Clarke and W. D. Roebuck, and to present us with the admirable piece of work which it is now our duty and pleasure to notice. The leading ornithologists in the various districts have been most ready to lend their assistance to the author, who has also been able to profit by the labours of his predecessors from Willughby and Tunstall downwards, not forgetting Charles Waterton, the renowned author of 'Essays in Natural History.' In fact, ancient records are one of the features of the book, and in this connexion we may call attention to the accounts of disused Duck-Decoys.

Yorkshire is not only the largest of English counties, but holds pride of place with regard to birds; and this is no matter for astonishment when we remember the varied character of its moorland, hills, and plains, its extended coast-line, and, above all, the fine cliffs of the Flamborough district, with their immense colonies of sea-fowl. Of old it could boast of breeding-places of the Bearded Tit, Bustard, Avocet, Black-tailed Godwit, and Black Tern, while the Goshawk nested in its woods; and we are now informed that the Dotterel may be found in summer in the western portion, and that the Wigeon and Golden-eye have been observed under circumstances that give countenance to the belief that they also may have bred within the county. That the Sand-Grouse did so during the great immigration of 1888 is, of course, notorious. The Hawfinch and Turtle-Dove are reported to have greatly increased in numbers, and the exact range of the Nightingale has been defined with precision, though in claiming for Yorkshire its "extreme northern and north-western boundary," Mr. Nelson has, we believe, overlooked an undoubted case of its occurrence in 1893 at Whittingham, in Northumberland (Hist. Berwickshire Nat. Club, vol. xiv. p. 202).

The Red-breasted Snipe (*Macrorhamphus griseus*) is recorded as new to the county.

The Introduction, largely taken from Messrs. Clarke and Roebuck's former work, is concerned with the physical features of Yorkshire and the status of the various species of birds, with some account of the migration on the coast. The illustrations are abundant, and include coloured figures of the Houbara Bustard, and many views of the Flamborough, Bempton, Buckton, and Speeton Cliffs, and of the method of climbing there practised.

The appendices contain an account of the Protection afforded to Birds in the county and of ancient records.

As regards the drumming of the Snipe, we should like to call the author's attention to the paper by Mr. Bahr in a late number of the 'Proceedings of the Zoological Society,' while on the plate facing p. 740 the Razorbill's egg seems to us decidedly too small.

17. *Nicholson on the Coal-Tits.*

[Notes on the Palæarctic Species of Coal-Tits. By Francis Nicholson. (Extracted from) Mem. and Proc. Manch. Phil. Soc. vol. 50. 21 pp.; 1 pl.]

This article, in which we have a good general review of the birds commonly termed Coal-Tits in England, is evidently sent to us in order that we may draw attention to the description of a new species from Coimbra, in Portugal, discovered by Dr. Vieira. Mr. Nicholson gives a coloured plate of this species, which he names *Parus vieiræ,* in company with what he calls *P. britannicus.*

18. *North on the Nests and Eggs of Australian Birds.*

[Nests and Eggs of Birds found Breeding in Australia and Tasmania. By Alfred J. North, C.M.Z.S., Ornithologist Australian Museum. Vol. ii. pt. 2. Sydney, 1907.]

We are glad to announce the good progress of this excellent work, to the great merits of which we have already called attention on more than one occasion*. The second part of the second volume continues and finishes the account of the Honey-eaters (Meliphagidæ), one of the most characteristic groups of the Australian Ornis. It also includes histories of such of the Nectariniidæ, Zosteropidæ, Dicæidæ, and Pardalotidæ as are found in Australia and Tasmania. As in former parts, the figures of birds and nests introduced into the text of this work are, in many cases, of very high quality. One of these (p. 208) represents the extremely curious nest of *Cinnyris frenatus*—the only species of the family of Sun-birds (Nectariniidæ) found in Australia, which is one of the foster-mothers of the Bronze Cuckoo (*Lamprococcyx plagosus*).

19. *North on the Birds of New South Wales.*

[Additions to the Avifauna of the County of Cumberland. By Alfred J. North. Rec. of the Australian Museum, vol. vi. pt. 8 (1907).]

To a handbook prepared for the use of the Members of the "Australian Association for the Advancement of Science," in 1898, Mr. North contributed a List of the Birds of the County of Cumberland, N.S.W. (which, we believe, adjoins Sydney), with notes on their haunts, habits, and localities. The present paper forms a supplement to that list, and contains the names of 13 additional species which have been recently ascertained to occur in the county, with short notes on each of them.

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* See 'Ibis,' 1907, p. 359.

20. *Ridgway on the Birds of North and Middle America.*

[The Birds of North and Middle America. By Robert Ridgway. Bull. U.S. Nat. Mus. No. 50. Part IV. Washington, 1907. 8vo. 973 pp.]

The fourth volume of Mr. Ridgway's great work on the birds of North and Middle America was received in this country in September last. It continues the history of the Passerine Birds to the end of the Cotingidæ, comprising the ten families Turdidæ, Zelodoniidæ, Mimidæ, Sturnidæ, Ploceidæ, Alaudidæ, Oxyrhynchidæ, Tyrannidæ, Pipridæ, and Cotingidæ. Of these the Sturnidæ and Ploceidæ might have been omitted, as they are both purely Palæogean types, represented in America in one case only by the Common Starling (*Sturnus vulgaris*), which is an occasional straggler to Greenland, and in the other by two Weaver-birds (*Spermestes cucullata* and *Estrilda melpoda*), which have been introduced into Porto Rico. There remain eight families, six of which are purely Neogean, while two, the Turdidæ and Alaudidæ, are also met with in the Old World.

Of the family Turdidæ 96 species and subspecies are recognised, the only species left in the genus *Turdus* being *Turdus iliacus*, which is an occasional visitor to Greenland: all the remaining typical Thrushes are transferred to the genus *Planesticus*. In spite of Sclater's protests (see 'Ibis,' 1903, p. 142), the name *Ixoreus* of Bonaparte is still retained for *Turdus nævius*, whereas Bonaparte states that the bird to which he applied that term (sc. *Tænioptera rufiventris*) "n'est pas une Grive ni même un Chanteur, mais un Volucre Tænioptérien."

Next to the Thrushes come the Mocking-birds (Mimidæ), of which the Author recognises 61 species and subspecies. Following Mr. Lucas he considers this group to be distinct both from the Wrens (Troglodytidæ) and the Thrushes (Turdidæ), with one or other of which they have been hitherto usually associated. Mr. Ridgway places the peculiar San Domingan form *Calyptophilus* with the Mock-Thrushes. This may be correct, but we should rather be inclined to consider it allied to *Phænicophilus* of the same island, which is usually referred to the Tanagers.

The only true Larks (Alaudidæ) in the New World are Shore-Larks, the Sky-Lark, included in the List, being merely a recent introduction. Of *Otocorys*, as we prefer to call the genus, Mr. Ridgway, following Dr. Dwight, admits no less than 23 subspecies, although he allows that in many cases their differentiation "is necessarily a matter of very great difficulty." As the Shore-Larks are mostly more or less migratory, it is indeed not easy to understand how these many subspecies can remain confined to distinct localities.

With the Alaudidæ terminates the long series of Oscinine Passeres belonging to the American Avifauna, and the Author now proceeds to the still larger Mesomyodian group, which is so highly characteristic of the Ornis of the New World. This he divides into fourteen families, three only of which are Palæogean, while all the eleven others are purely Neogean. Of these the Oxyrhynchidæ, Tyrannidæ, Pipridæ, and Cotingidæ are taken in the present volume. The Tyrannidæ are indeed a hard task; and, as Mr. Ridgway says, "probably no other group of birds is so difficult to study." Five hundred and fifty species, referable to more than eighty genera, are already described, and, if subspecies are to be reckoned, these numbers will, no doubt, be largely increased. Mr. Ridgway introduces numerous alterations in the arrangement of the Tyrants proposed by Sclater in the fourteenth volume of the 'Catalogue of Birds in the British Museum,' and has made many improvements; but the system adopted must still be considered as provisional, the anatomy of many of the forms being entirely unknown.

The arrangement of the Pipridæ and Cotingidæ, which concludes the volume, has been still more seriously modified than that of the Tyrannidæ. Mr. Ridgway's accurate examination has shown that many of the genera in these two groups have been wrongly placed, and that some forms hitherto referred to the Tyrannidæ should be removed to the Cotingidæ.

In conclusion, we cannot withhold our admiration of the skill and labour which Mr. Ridgway has for so many years bestowed on this important work. In the four volumes now completed there have been fully described no less than 1675 species and subspecies of North and Middle American Birds. Besides this, the characters of all the genera, families, and orders have been most carefully studied and described. But much more remains to be done, for only a little more than half the long series is yet finished. We cordially wish the author health and strength to bring his great work to a happy conclusion.

21. *Rothschild on new Cassowaries.*

[Some Notes on Cassowaries. By the Hon. Walter Rothschild, Ph.D. Nov. Zool. xiv. p. 504 (1907).]

Dr. Rothschild gives fresh descriptions of *Casuarius uniappendiculatus mitratus*, *C. jamrachi*, and *C. doggetti* from more adult specimens. He now makes the known species and subspecies of *Casuarius* 28 in number.

A fine coloured drawing is given (plate v.) of the head of *C. jamrachi,* which is "probably from the Admiralty Islands."

22. *Rothschild and Hartert's Notes on Papuan Birds.*

[Notes on Papuan Birds. By the Hon. Walter Rothschild, Ph.D., and Ernst Hartert, Ph.D. Nov. Zool. xiv. p. 435 (1907).]

Drs. Rothschild and Hartert continue [*] their interesting notes on the birds of New Guinea and the adjacent islands. They now write on the Papuan Cuculidæ, and describe *Cacomantis excitus* (New Guinea) and *Eudynamis orientalis alberti* (Solomon Isl.) as new, and pass on to the Strigidæ, amongst which *Strix flammea meeki,* from the north-east coast of British New Guinea, is characterized as a new subspecies.

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[*] See 'Ibis,' 1904, p. 302.

23. *Rothschild and Hartert on Meek's Collections from British New Guinea.*

[List of Collections of Birds made by A. S. Meek in the Mountains on the Upper Aroa River and on the Angabunga River, British New Guinea. By the Hon. Walter Rothschild, Ph.D., and Ernst Hartert, Ph.D. Nov. Zool. xiv. p. 447 (1907).]

This memoir gives us an account of the remarkable collections of birds made by Mr. Rothschild's excellent collector, Meek, on the mountains of the Upper Aroa River and on the Angabunga River, in British New Guinea. The specimens are referred to 197 species and subspecies, amongst which *Hypotænidia brachypus alberti*, *Clytomyias insignis corti*, *Edoliisoma montana minus*, *Myzomela obscura meeki*, and *Ptilotis meekiana* (all from New Guinea) are described as new. *Pœcilodryas leucops albigularis* (from Cape York) is also new. Mr. Meek procured on the Aroa River a specimen of the remarkable Duck *Salvadorina waigiuensis*. There are now five examples of this bird in the Tring Museum.

24. *Theobald on "Economic Ornithology."*

[Economic Ornithology in relation to Agriculture, Horticulture, and Forestry. By Fred. V. Theobald, M.A., Vice-Principal and Zoologist of the S.E. Agricultural College. Science Progress, no. 6, p. 263.]

Economic Ornithology is a branch of our subject which is not often alluded to, except casually, in the pages of this Journal, and we are grateful to Mr. Theobald for calling our attention to it. "There are many people," he writes, "who have a sentimental love for birds and say 'none should be destroyed.' Others, who have lost much money by their ravages, say 'destroy them all.'" The opinion of ornithologists in general is certainly largely in favour of the first of these alternatives; but it may, perhaps, be regretfully allowed that there are some few exceptions required to the general rule of preservation. Mr. Theobald goes through the principal birds of the British List with much fairness, and we agree with many of his conclusions, though others are not quite satisfactory. What would be the state of our pastures, he pertinently asks, if there were no birds? Were it not for our Rooks, Jackdaws, Starlings, Plovers, and Gulls the pastures would be rendered bare by subterranean insects. But those who are interested in the question should read Mr. Theobald's article, and may refer to some of the eighteen authorities on the subject which he recommends for study. We observe, however, that he does not mention what has been done in America, where the Agricultural Department at Washington has performed an enormous amount of excellent work relating to this important question.

25. *Townshend and Allen on the Birds of Labrador.*

[Birds of Labrador. By Charles W. Townshend, M.D., and Glover M. Allen. Proc. Boston Soc. of N. H. vol. xxxiii. no. 7 (Boston, 1907).]

The enormous peninsula called Labrador, which lies between Hudson's Bay on the one side and the Atlantic on the other, has had many visitors who have studied its birds and have written more or less extended notes about them. The authors of the present memoir made a summer excursion up the east coast in 1896, which, although brief, has served to give an idea of the country to which they have devoted their attention, and has been of much use to them in the composition of the present memoir.

A well-written introduction treats of the topography, faunal areas, and ornithological history of Labrador and of other allied topics. George Cartright, of Newark, England, appears to have been the earliest writer on the birds, and has given a vivid account of them, in the course of which he has described the capture of a Great Auk. The illustrious Audubon made a special expedition up the coast in the summer of 1833, and achieved good results for his great work. Since then Storer, Bryant, Coues, Verrill, Brewster, Packard, and many other ornithologists have visited Labrador, and added more or less to our knowledge of its Avifauna.

The authors summarize all the previous records of the birds of Labrador in an "Annotated List" of the species and subspecies arranged according to the American Check-list and provided with abundant field-notes. They make the authenticated species and subspecies 213 in number, besides which there are 44 "doubtful and erroneous" and 2 extinct (the Great Auk and the Labrador Duck). The Shore-Lark of Labrador was found to be an "abundant summer resident along the coast, breeding wherever there is barren ground." It is referred to typical *Otocorys alpestris,* though other authorities have recorded the Labrador form as *O. a. praticola.* A single example of the Turkey-Vulture (*Cathartes aura*) was obtained in Labrador in November 1906.

VIII.—*Letters, Extracts, Notes, &c.*

We have received the following letters addressed "To the Editors of 'The Ibis'":—

Sirs,—In the number of 'The Ibis' for July last (p. 378), Mr. Scott B. Wilson, among the results of his collecting-trip to the Eastern Pacific, announces the discovery of an interesting new Parrakeet of the genus *Coriphilus* (*C. cyaneus*). On examining his description and Mr. Frohawk's figure of the supposed new species, I am of opinion that what has taken place is simply a renaming of the *Psittacus cyaneus* of Sparrman (Mus. Carlss. vol. ii. pl. 27), a name relegated long since to the synonyms of *Coriphilus taitianus* (Gm.). This conclusion is corroborated by the statements of both authors, which shew the entire absence of any white markings, as well as the dark colouring of the iris, bill, and feet, which in *C. taitianus* are, like the iris, red. Sparrman describes the bill as "*pallidum, apice fuscum,*" but it may be supposed that such a colouring had originated in the well-known way from the desiccation of the corneous stratum. We know of specimens belonging to this species the underparts of which are red, while the white colour in the plumage is wanting or is confined to the throat. The first stage is shown by "La Perruche Sparrman" of Levaillant (Hist. Nat. Perr. vol. i. p. 128, pl. 66), the latter by the figure which Messrs. Forbes and Robinson give of a variety of *C. taitianus* (Bull. Liverpool Mus. vol. i. p. 6, pl. 2). Kuhl (Consp.

Psitt. p. 68) also describes "*Psittacus sparmanni* Vaill." as "toto corpore cæruleo, collo antico cærulescenti-albo, rostro pedibusque rubris." These descriptions may prove the correctness of Dr. Finsch's presumption that the individuals with red corneous parts and white on the throat are the young of *C. taitianus*—a conclusion drawn by Count Salvadori as regards the specimen figured by Messrs. Forbes and Robinson ('Ibis,' 1905, p. 413). On the other hand, I cannot agree with Dr. Finsch's conjecture (*l. c.*) that Levaillant's remarks on the original of his figure are erroneous, the figure being merely a copy of Sparrman's plate, especially as Mr. Wilson's discovery has proved the existence of a uniformly-coloured blue species with a darker shade on the under surface. Therefore, in my opinion, the genus *Coriphilus*, although rapidly approaching extinction, contains at present the following three species:—

1. C. TAITIANUS Gmelin (1788).
"*La Perruche Sparrman*" Levaillant (1841).
Psittacus sparrmani Bechstein (1812).

2. C. CYANEUS Sparrman (1787).
C. cyaneus Scott Wilson (1907).

3. C. ULTRAMARINUS Kuhl (1820).

I am, Sirs, yours &c.,
A. JACOBI.

Kgl. Zoologisches Museum,
Dresden, Zwinger,
Oct. 4, 1907.

SIRS,—We are engaged upon a work dealing with the Ornithology of Sussex, and are very anxious to secure the co-operation of any of your readers who may be interested in the subject. We shall therefore deem it a great act of courtesy if all observers, conversant with the Sussex avifauna, will kindly furnish us with notes and memoranda.

Particularly would we ask for information concerning not only the occurrence of rare and casual migrants (in spring, autumn, and winter), but also on the *distribution*—and this is a great point—of all the scarce and local *breeding* species, such as the Raven, Hobby, Montagu's Harrier, Hoopoe, Golden Oriole, Dartford Warbler, Grasshopper-Warbler, Marsh-Warbler, the two Spotted Woodpeckers, the Ring-Ouzel, Hawfinch, Goldfinch, Lesser Redpoll, Tree-Sparrow, and Cirl Bunting. We have, from time to time, found the nests of some of these species; but as it is manifestly impossible for two men to work the whole of the county, we should very much appreciate notes dealing with the nesting of *any* of the more local birds (especially those above mentioned), which doubtless breed or have bred in portions of the county, but which may have escaped our notice. We should also be glad of any list of the summer-migrants from different parts of Sussex which has been kept over a series of years. We may assure our informants that, whenever it is thought necessary, the exact breeding-sites of the rarer birds will be suppressed.

Yours &c.,

Oct. 14th, 1907.

H. A. Bryden,
10 Gore Park Avenue, Eastbourne.
John Walpole-Bond,
Horsham Vicarage, Sussex.

Sirs,—In 'The Ibis,' 1907, p. 574, Mr. Collingwood Ingram says: "Mr. Pycraft informs me that in *Panurus biarmicus* the markings are differently arranged and are white instead of black, an interesting discovery for which we are indebted in the first place to Miss E. L. Turner." In justice to myself, and without wishing in any wise to detract from the observational powers of my friend Miss Turner, allow me to point out that on page 217 of Mr. A. Dutt's book 'The Norfolk Broads,' I wrote as follows of the Bearded Tit: "From babyhood these birds are beautiful to prying eyes, although the beauty is concealed until hunger opens the nestling's mouth, when, upon the roof may be seen four rows of onyx spots set in deep pink carnelian."

Yours &c.,

Maurice C. H. Bird.

Brunstead Rectory,
Stalham, Norfolk.
Nov. 5, 1907.

Sirs,—As I shall not be able to be present at the next meeting of the B.O.C., I should like, with your approval, to draw the attention of the Members of the B.O.U. to an atrocity which took place this spring in the Azores, in connexion with the very rare and almost extinct Bullfinch (*Pyrrhula murina*). In the space of eight weeks by diligent hunting FIFTY-THREE specimens of this interesting bird were shot by a professional collector and sent to Prof. Koenig (of Bonn), who employed him. I myself saw the particulars, measurements, sex, &c., of each one of these birds while I was at S. Miguel, and can vouch for the accuracy of the figures, of which I made a note immediately.

I consider this lamentable and greedy slaughter an excellent example of the danger of a policy which advocates that when a bird is likely to become extinct, the best course to pursue is to shoot it down for preservation in museums. This may be a good policy if it is absolutely certain that the species is on the verge of extinction and cannot be saved. Mr. Ogilvie-Grant, for example, went to the Azores two or three years ago and had the greatest difficulty in procuring *two* or *three* specimens of this bird, even with the assistance of the peasants. It was, therefore, presumed to be practically extinct, and that the sooner the remaining examples were secured in the interests of science the better. But that they are or were by no means hopelessly doomed is proved by the fact that this collector of Dr. Koenig, who was engaged to make a collection of all the birds on the island, was able to procure 53 examples of this rare species. When one remembers the skulking habits, love of solitude, and the very inconspicuous colours of this bird, it is not too much to hope that there may still be left far more examples than are supposed to exist and enough to perpetuate their race for many years. It is very unlikely that the woods and fastnesses in the mountains at the east end of the island of S. Miguel will ever be seriously interfered with, and if steps were taken to stop this mere hungry greed for the acquisition of a fine series of a rare bird not possessed by rival collectors, I believe its existence could still be assured. In a conversation I had with Major Chanes on the subject, he seemed to regard the preservation of birds as almost too hopeless a problem to contend with, owing to want of funds and organisation. That it is far from being so it is unnecessary for me to point out.

I am, Sirs, yours &c.,
Percy R. Lowe.

Le Nid, Monte Carlo,
Principauté de Monaco,
Oct. 2nd, 1907.

The Bombay Natural History Society.—We are glad to announce that Mr. Norman Boyd Kinnear, M.B.O.U., who has been for some time acting as honorary assistant to Mr. Eagle Clarke in the Royal Scottish Museum, Edinburgh, has been appointed Keeper of the Museum of the Natural History Society of Bombay. Mr. Kinnear, who is a great-grandson of the late Sir William Jardine, will shortly leave England to take up his new appointment.

Recent Additions to the Berlin Museum.—In the 'Ornithologische Monatsbericht' for November last we are told of several important collections of birds lately received at Berlin. Messrs. Niedieck and Hilgert have sent in 240 skins from Eregli (the present terminus of the Bagdad Railway) and the adjoining Taurus Mountains. They are referable to 79 species, amongst which is a new Goldfinch, *Carduelis niediecki.* Herr Herrman, on his return from Bolivia and the Pilcomayo, has brought 300 specimens of birds. Herr Oberförster Hafs has sent from Tchin-tau, in China, 128 specimens, amongst which are representatives of 14 species new to the avifauna of Kiautschou. Herr Tessman has contributed many birds from the Spanish Fan-country of West Africa, and Dr. Gruner a good series of birds and eggs from Iceland. So we see that our German friends have good correspondents in all parts of the world.

The Duke Adolf Frederick of Mecklenburg's African Expedition.—We also learn from the Ornithol. Monatsb.

(1907, p. 192) that large collections in Natural History have been made by the Duke Adolf Frederick of Mecklenburg in Karagweh, on the western side of Lake Victoria, and are expected to arrive shortly in Berlin. The Duke proposes to proceed to Lake Kivu, and subsequently to visit Lake Albert and the Ruwenzori Mountains. The zoologist of the expedition is Dr. Schubetz.

Rennell Island, Western Pacific.—In reply to a request for a specimen of *Woodfordia supeciliosa* *, to be figured in 'The Ibis,' Mr. Woodford (Government Residence, Tulagi, Solomon Islands, Aug. 19th, 1907) writes to Sclater that he sees no possible chance of obtaining another example. "Rennell is an island about 70 miles outside the Solomon group, and very difficult to get at, as it is almost impossible to find an anchorage there. I managed to hang on a few hours in fine weather, on the south side, and am one of the first white men who have ever landed on it. I did not like to do any shooting there for fear of frightening the natives, who are a most unsophisticated community, pure Polynesians, not Melanesians, still in the 'hoop-iron' age. During my visit, besides the bird, I got a new orchid, which has been described at Kew as *Saccolabium woodfordi.* I noticed a Black-necked Ibis breeding on Rennell Island, a bird which I have never seen on the Solomons."

In an article in 'Man' (vol. vii. no. 3), on the natives of Rennell, Mr. Woodford says the island is perhaps "as little known as any in the Western Pacific." Here, then, is a fine opportunity for some enterprising Member of the B.O.U. to distiuguish himself.—P. L. S.

The Ptarmigan of Franz-Josef Land.—Mr. H. J. Pearson, in his letter published in this Journal last year ('Ibis,' 1907, p. 509), has shown that a species of Ptarmigan (*Lagopus hyperboreus*) was found in Alger Island, Franz-Josef Land, by the members of the Ziegler Expedition.

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* See 'Ibis,' 1907, p. 501.

A careful perusal of Mr. Fiala's recently published history of the Ziegler-Fiala Expedition ('Fighting the Polar Ice') proves that the Ptarmigan occurs in other islands of the Franz-Josef Archipelago besides Ziegler Island, which is one of the most southern of the group. The main point of interest, however, is that it is found even in Rudolf Island, the farthest north island of the whole Archipelago (81° 40′ N. L.), where some of the members of the expedition feasted on a "Ptarmigan fricassee" on Thanksgiving Day (Nov. 24th). "Four of these birds had been shot at camp during the previous summer and saved for this special occasion" (*op. cit.* p. 154). It is evident that the Ptarmigan must have crossed over the whole of the Franz-Josef Archipelago on their route from Spitsbergen to Rudolf Island.

A new Bird for Egypt.—We receive frequent letters from Mr. M. J. Nicoll, of the Gizeh Zoological Gardens. He is still engaged in adding to his collection of birds, when he can find time. The most recent novelty obtained is a specimen of the *Saxicola melanura* of Rüppell, which, though well known in Abyssinia and Southern Arabia, has not previously been recorded from Egypt. A good figure of the species has already appeared in this journal (see 'Ibis,' 1896, pl. i. fig. 2, p. 13), but whether the representative form found in Palestine (*S. yerburii* Sharpe), which is figured on the same plate, is distinct, we are a little doubtful. It may, perhaps, be maintained as a "subspecies."

Rare Birds observed at Fair Isle.—In the number of the 'Annals of Scottish Natural History' for October last (p. 246) Mr. Eagle Clarke gives the following account of his recent visit to Fair Isle:—"I have just returned from a five weeks' residence on Fair Isle, where, in the course of my investigations, I witnessed the passage-movements of no less than 82 species of migratory birds. Among the species observed were several of special interest (some of them being new to Scotland), and these I propose to mention in this preliminary note, reserving full particulars for a future contribution on the results of the year's observations. The rarer birds that came under my notice during September and the early days of October were: the Black-throated Chat (*Saxicola occidentalis*), Black-headed Bunting (*Emberiza melanocephala*), Grey-headed Wagtail (*Motacilla viridis*), Red-breasted Flycatcher (*Muscicapa parva*), Greater Redpoll (*Acanthis rostrata*), Ortolan Bunting (*Emberiza hortulana*), Lapland Bunting (*Calcarius lapponicus*), and the Hoopoe (*Upupa epops*)."

'*British Birds*' *.—Most of our readers, we suspect, are already familiar with 'British Birds,' but nevertheless the successful start of a new periodical devoted to Ornithology is an event which cannot be passed over in the columns of 'The Ibis.' The first number of 'British Birds' was issued in June last, and it has continued to appear with unfailing regularity on the 1st of each month ever since. The Editor and the Assistant-Editor are well known to all of us, and there can be little question as to their competency for the task before them. We need say no more upon that point. But the question is whether they can secure an unfailing supply of good material in the short interval between the numbers. This remains to be proved, but for the present they seem to have received the support of many of the best-known names in British ornithology. The late Howard Saunders was a contributor to the first number; in other numbers we observe the names of Mr. Walter Rothschild, Mr. F. C. Selous, Mr. F. W. Headley, and Mr. N. C. Ticehurst, all well-known authorities on the 'British List,' so there can be no doubt that up to the present the Editors have adequate assistance, and we trust they will continue to obtain it.

The illustrations are a good feature in 'British Birds,' they are mostly taken from photographs, as is the fashion of the day. Mr. Selous's picture of the White-tailed Eagle's nest (p. 77) may be specially commended, as also Miss E. L. Turner's successful photograph of the young of the Great Crested Grebe (p. 104). Moreover, in the second number will be found a most excellent portrait of Alfred Newton, and in the seventh number an almost equally good one of Howard Saunders. We think that we have now said sufficient to call the attention of such of our readers as are not already acquainted with it to this newest addition to the list of ornithological periodicals.

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* 'British Birds, an Illustrated Magazine devoted to the Birds on the British List.' Edited by H. E. Witherby, F.Z.S., M.B.O.U., assisted by W. P. Pycraft, A.L.S., M.B.O.U. Nos. 1–7. June–December, 1907. London: Witherby & Co.

Mr. Boyd Alexander.—Since his return to England in February last, Mr. Alexander's time has been fully occupied with the preparation of the two excellently written and fully illustrated volumes ('From the Niger to the Nile') that contain the narrative of his famous expedition. After a short rest, he is now devoting himself to the examination and description of the 2500 birds collected during his transit of the African continent. We are much pleased to be able to announce that the results of his work on this branch of the Ethiopian Fauna will be published in 'The Ibis,' in two parts. The first part of "The Birds of the Alexander-Gosling Expedition" will relate to the birds of Nigeria and Lake Chad, the second to the species met with in the Congo State.

Mr. S. A. Neave's New Expedition.—Mr. S. A. Neave, whose interesting paper on the birds of North-eastern Rhodesia (collected by him as Naturalist to the Geodetic Survey) we have just noticed (above, p. 185), is now again in the same country, busily engaged in supplementing the collections made on his former visit. Mr. Neave has gone out as Assistant to his father, Dr. Sheffield Neave, who is the Chief Officer of the "Sleeping-Sickness Commission" sent into the Katanga district for the purpose of studying this fatal form of disease. The party, we are told, landed at

Lobita Bay in Benguela, and proceeded up the projected line of railway into the copper district of the Congo Free State. Mr. Neave's last letters (15. 9. 07) were dated at Kambove in Katanga, but he is now on his way to Fort Jameson in N.E. Rhodesia. He has already sent home about 450 bird-skins.

Mr. Seth-Smith's Mission to Australia.—Mr. David Seth-Smith, M.B.O.U., left London on Dec. 15th last for Australia. In consequence of the importance attached to the exhibition of Australian animals proposed to be held in the Gardens of the Zoological Society of London in July next, Mr. Seth-Smith has been requested by the Council of the Society (of which he is himself a member) to go out to Australia and superintend the packing and conveyance to London of important collections of animals presented to the Society by the Gardens of Australia and New Zealand. This he has consented to do. As Mr. Seth-Smith is the owner of a fine collection of living birds, and is, besides, Editor of the 'Avicultural Magazine,' it is obvious that this important mission could not have been placed in better hands.

Yarrell's 'British Birds' and *Saunders' 'Manual.'*—At the last meeting of the British Ornithologists' Club (held on December 18th) it was announced from the Chair that shortly before his death the late Mr. Howard Saunders had expressed a wish that Mr. William Eagle Clarke, of the Royal Scottish Museum, Edinburgh, should be his successor in the Editorship of any new editions of Yarrell's 'British Birds' and Saunders' 'Illustrated Manual of British Birds' that might be required. It was added that all documents and papers relating to this subject had been transferred by Mr. Saunders' executors to the custody of Mr. Eagle Clarke, who had accepted the task offered to him by his late friend.

THE IBIS.

NINTH SERIES.

No. VI. APRIL 1908.

IX.—*A Second Contribution to the Ornithology of the Egyptian Soudan.* By A. L. Butler, F.Z.S., M.B.O.U., Superintendent of Game Preservation, Soudan Government.

Since writing the article on Soudan birds which appeared in 'The Ibis' for July 1905, I have been able to do some travelling on the Suakin side of the country, and in the northern part of the Bahr-el-Ghazal Province, neither of which localities I had visited previously. The information obtained on these journeys, and some additional notes from Khartoum, are embodied in the present paper.

The following recent articles on Soudan ornithology may be referred to in connexion with the present one, but to save space I have not given more detailed references :—

Capt. S. S. Flower.—Notes on the Fauna of the White Nile. P. Z. S. 1900, p. 950.

Mr. H. F. Witherby.—An Ornithological Expedition to the White Nile. Ibis, 1901, p. 237.

The Hon. N. C. Rothschild and Mr. A. F. R. Wollaston.—On a Collection of Birds from Shendi, Soudan. Ibis, 1902, p. 1.

Mr. W. R. Ogilvie-Grant and Mr. R. McD. Hawker.—On a Collection of Birds made on the White Nile. Ibis, 1902, p. 393.

Mr. A. L. Butler.—A Contribution to the Ornithology of the Egyptian Soudan. Ibis, 1905, p. 301.

Mr. A. L. Butler.—On the Red-tailed Bush-Lark, *Mirafra erythropygia* Strickl. Ibis, 1907, p. 467.

Mr. W. R. Ogilvie-Grant.—On the Birds procured by Mr. W. N. McMillan's Expedition to the Sobat and Baro Rivers. Ibis, 1907, p. 578.

Mr. W. R. Ogilvie-Grant.—Descriptions of Three new Species of Birds from the Bahr-el-Ghazal. Bull. B. O. C. vol. xxi. p. 16.

For specimens of some birds which I have not obtained myself I am indebted to Mr. G. B. Middleton, of the Steamers and Boats Department, Soudan Government, and to M. de Vilmorin, who kindly allowed me to select some skins from a small collection which he had made while shooting on the Upper Nile in February 1906.

For assistance in identifying specimens I am very grateful to Mr. W. R. Ogilvie-Grant and the assistants at the Natural History Museum, and also to Mr. M. J. Nicoll, Assistant Director of the Giza Zoological Gardens.

Brief itineraries of my two journeys alluded to in this paper may be useful in giving the reader an idea of the relative positions of the places mentioned, many of which are not of sufficient importance to be found on ordinary maps.

Journey from Suakin to Kassala, &c. (March to May, 1906).

From Suakin I travelled twenty-five miles south along the scrub-covered sandy plain between the mountains and the sea, then turned south-west up the Khor Dahand Valley for three miles, and up the steep Kolkilai Pass (five or six miles) on to the Erkowit plateau. The top of the hill is covered with grass and Euphorbias; rocky "kopjes," frequented by Klipspringers, are scattered about; and there are plenty of trees as well as a good deal of vegetation in the ravines, especially those on the eastern side of the range, which gets the damp atmosphere from the sea. The general elevation of the plateau is just over 3000 feet, but the highest points on it rise to 5077 and 4293 feet. The climate is delightful, and a small hill-station is now being made there. Noticeable birds on this hill are *Francolinus erckeli*, *Zosterops abyssinica*, *Cinnyris habessinicus*, &c.

A few miles south of Erkowit the hills become much more rugged and barren; vegetation is scanty and mostly confined to the bottoms of the ravines. The Klipspringer gives place to the Nubian Ibex and Salt's Dik-dik, while the birds just mentioned gradually disappear. The little *Ammoperdix cholmleyi* succeeds the big Francolin, and small Passerine birds are scarce. I followed a large ravine, the Khor Ashat, eastwards out of the hills, emerging on to the maritime plain again thirty-six miles south of Suakin, and then turned south towards Kassala. (From Suakin to Kassala is three hundred miles.)

From Suakin to Jebel Maman (seventy-six miles N. of Kassala) the country is, on the whole, very barren, the track running over sandy or stony ground, and skirting bare, rocky hills. Several broad, shallow, sandy "khors," fringed with Dom-palms and tamarisk, are crossed. This coast-plain is inhabited by Sœmmerring's and Isabelline Gazelles and wild asses, with Dik-dik at the "khors."

From Jebel Maman the country changes to black-cotton soil and carries much more bush. Such species as *Ammoperdix cholmleyi, Rhodophoneus cruentus, Argya acaciæ,* and *Pyrrhulauda melanauchen* disappear, and *Corvus scapulatus, Coracias abyssinicus, Laniarius erythrogaster,* &c. are at once met with, while Heuglin's Gazelle almost entirely replaces the Isabelline. Here we turned a little south-west to a place called Filik, to try for a lion, and my cousin, Mr. H. Boughton Leigh, who was with me, got a lion and a lioness. I do not think that they range much further north than this, but south along the Atbara they are numerous. From Kassala we went west to the Atbara (40 miles), followed the river to Tomat (56 miles), crossed to Gedaref (45 miles), from there to Wad Medani on the Blue Nile (146 miles), and returned down the river by steamer to Khartoum.

Journey in the Bahr-el-Ghazal Province
(January to April, 1907).

From Meshra-el-Rek to Wau * the general direction of the road is south-west, and the distance about a hundred and sixteen miles. The following is the order of intermediate points at which I collected specimens:—Meshra, Amien, Madâl, Mayik, Menyah, Gameiza, Gardein, Bîr-el-Girûd, Dug Dug, Doleiba, Ayûm, Moyen, Makwak, Wau.

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* Wau, 7° 41′ 50″ N. lat., 28° 2′ 58″ E. long.

Wau, a prettily-situated station on the Jur River, is the headquarters of government in the Bahr-el-Ghazal Province. The intermediate places are either Dinka or Jur villages of no great size, or merely halting-places where huts have been built and wells dug, near selected shade-trees when possible. From Meshra to Ayûm the natives are Dinkas, and after that Jurs.

From Meshra to Ayûm the country is flat, open, grass-covered, and alluvial, with some thorn-bush and scattered trees and "Doleib" palms at intervals. On the whole, it is mostly very open plain. Just beyond Ayûm, and some thirty-five miles before reaching Wau, the country suddenly changes to an ironstone formation, covered with fairly high open forest. Excepting for small plains bordering rivers, and the channels of "khors," this ironstone forest-country continues the whole way to Chak Chak, and south-west to Dem Zubeir. The change in the country and vegetation at Ayûm is naturally associated with a change in the animal- and bird-life, and many truly forest species are first met with at this point. Among large mammals, for instance, Heuglin's Hartebeest (*Bubalis lelwel*) at once takes the place of *Damaliscus tiang* on the alluvial. Among birds the red-legged *Francolinus gedgii* Grant at once gives place to the yellow-legged *F. icterorhynchus* Heugl. and the Stone-fowl, *Ptilopachis fuscus* (Vieill.), while changes among the smaller species are equally noticeable.

From Wau to Chak Chak * (a small station on the Chell River) the direction is north-west, and the distance about the same as from Meshra to Wau—perhaps a hundred and twenty miles. Intermediate points mentioned in this paper are, from Wau: Buvâl, Khor Gitti, Bringi's, Kuanga's, Sheik Zaid, Bedari's Village (where the Pongo or Bongo River is crossed), Ofio's, and Chak Chak. The natives along this route are mostly Jurs and Golo, with Niam-Niams on the Pongo, and Dinkas again at Chak Chak. The names given are mostly those of villages of considerable size.

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* Chak Chak, 8° 41′ 0″ N. lat., 26° 51′ 50″ E. long.

At the Khor Gitti I was on what is, to a naturalist, classic ground. Here Theodor von Heuglin spent nine months in 1863, and doubtless explored and collected as happily as I did, though novelties were more plentiful forty-four years ago. Here, also in 1863, Dr. Steudner died; and here the unfortunate, brave-hearted Miss Tinné spent the miserable weeks which ended in her mother's death in this remote spot. From the work of another famous follower in their steps, Dr. Georg Schweinfurth, I have gathered the details of the past ('Heart of Africa,' vol. ii. p. 199).

From Chak Chak we went about fifty miles south-west towards Dem Zubeir *, keeping E. of the Chell River, and wandered about exploring the open "khors" which intersect this forest-country and drain into the Chell. The natives of the few villages here are Kreish. We returned to Meshra by the same route, with a short deviation to the Jur village of Dud Majok, about twenty-five miles north-west of Wau.

On this journey I was accompanied by a friend, Mr. Gilbert Blaine, who had with him his English falconer, Best. The latter also collected birds and made very good skins of them, but confined himself mostly to Hawks and brightly-coloured species.

Best's want of success in trapping mammals was the subject of a good deal of chaff from me, until one day he succeeded in catching a full-grown male leopard in a half-crown rabbit-trap set for a mongoose, whereafter I had to hold my peace!

The Bahr-el-Ghazal is rather a bad country for insect pests, which are a considerable drawback to collecting and preserving specimens. The most enthusiastic ornithologist cannot remain long staring up into a thickly-foliaged tree while the tsetse-flies are lining up in rows on his face, neck,

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* Dem Zubeir, 7° 43′ 30″ N. lat., 26° 8′ 30″ E. long.

and hands, and hundreds of minute bees (of the genus *Melipona*—fortunately stingless!) are trying to drink the moisture from his eyes! And in camp, honey-bees, attracted by the water, crawled over me in scores while I was preparing skins, and, in spite of caution, in skinning a specimen of *Cerchneis ardesiacus* I got stung on the hands four times.

When it came to trapping small mammals, the site of a successful trap was generally marked by a black mass as large as a mole-hill, composed entirely of ants, which furiously resisted the recovery of the trap and the useless remains of the unfortunate little mouse or shrew in it!

I have given localities and dates as accurately as possible, even with regard to common species, as these records appear to me to be very necessary to an ultimate understanding of the distribution and migrations of our Soudan birds.

Specimens which I have collected *since* writing my previous paper are listed under their names.

1. Nectarinia platura Vieill.

a. ♂. Moyen, 21. 1. 07.

This Sun-bird was frequently met with throughout my journey in the Bahr-el-Ghazal Province. Males were in full plumage.

2. Nectarinia pulchella (Linn.).

a. ♂ juv. Chak Chak, 18. 2. 07.
b. ♂ juv. Pongo River, 3. 2. 07.

At Khartoum some of these Sun-birds had assumed the full breeding-plumage by October 10th, 1906, and they, or others, were still in it throughout May 1907. They were also common throughout the forest-country in the Bahr-el-Ghazal Province on my line of march, but seem to breed at a different season in that region, probably in the summer rains, as between January and April I did not see a single male in full plumage.

3. Cinnyris habessinicus (Hempr. & Ehr.).

a. ♂. Erkowit, Suakin, 24. 3. 06.
b. ♂. ” ” ”
c. ♂. ” ” ”

The Abyssinian Sun-bird was abundant on the Erkowit Hill in March, when the males were in full plumage. I never saw them below about 2000 ft., and about half-a-day's march into the more barren Gamilab Hills south of Erkowit they disappeared entirely.

4. **Cinnyris erythrocerius** (Heugl.)?

I saw a few of these Sun-birds at one locality only in the Bahr-el-Ghazal country—between Moyen and Wau. I shot a male in breeding-plumage on January 3rd, but unfortunately knocked it to pieces and did not keep it. I did not see the bird again beyond Wau, and on my return journey I was ill with fever at the point where it had occurred before, and was not able to look for it again.

5. **Chalcomitra acik** (Antin.).

a. ♂. Kuanga's, 2.2.07.
b. ♂. Makwak, 22.1.07.
c. ♂. Wau, 24.1.07.
d. ♂ juv. Chak Chak, 16.2.07.
e. ♀. Chak Chak, 14.2.07.
f. ♀. Makwak, 1.4.07.

The Acik Scarlet-chested Sun-bird was very common in the ironstone forest-country from Ayûm to Chak Chak, from January to the beginning of April. It is one of the most beautiful Sun-birds that I have ever met with. The Golo natives call it "Cho-cho." Antinori considered it a migrant to this district from the south, arriving in February and leaving again in the middle of April. I left this part of the country just at that time myself, but I think that it is more probably a resident species, easily overlooked in the luxuriant vegetation of the rainy season when out of breeding-plumage.

6. **Anthothreptes longuemarii** (Less.).

a. ♂. Khor Gitti, 30.1.07.
b. ♂. Pongo River, 4.2.07.
c. ♂. Chak Chak, 1.3.07.

The Western Violet-backed Sun-bird was fairly common from Wau to Chak Chak and thence towards Dem Zubeir.

Captain Shelley only traces the range of this species as far north as Sassa in the Niam-Niam Country, and says that *A. orientalis* Hartl. certainly replaces it in the Nile watershed. According to him, it was *A. orientalis* which Von Heuglin obtained near Wau, and Antinori near the Bahr-el-Ghazal River. The birds which I collected in this district, however, certainly belong to the Western form. Chak Chak is about 4 degrees farther north than Sassa.

7. Zosterops senegalensis Bp.

a. ♂. Pongo River, 22.3.07.

I found this White-eye common along my route in the Bahr-el-Ghazal country. The birds were first noticed at Amien, occurred again at Wau, and were met with daily afterwards. They were especially plentiful in a kind of thick bush which fringed the Khor Gitti.

8. Zosterops abyssinica Guér.

a. ♂. Erkowit, 29.3.06.

The Abyssinian White-eye was common on the Erkowit Hill, from near the foot of the Kolkilai Pass to the summit —about 4000 ft. It was met with in flocks, actively working about among the vegetation in the ravines, and was absent from the more barren hills immediately south.

9. Parus leucomelas Rüpp.

a. ♂. Menyah, 16.1.07.

The Northern Black Tit was common between Meshra-el-Rek and Wau, and in the more open parts of the country from there to Chak Chak.

10. Parisoma plumbeum (Hartl.).

a. ♀. Khor Gitti, 29.1.07.
b. ♀. Chak Chak, 12.2.07.
c. ♀. ,, 27.2.07.

Met with on several occasions between Wau and Chak Chak, though I never saw more than one at a time. It was generally flitting about on branches, with half-expanded wings and expanded tail, the white outer rectrices being displayed conspicuously.

11. **Motacilla vidua** Sundev.

I noted the White-winged Wagtail on the Jur River at Wau in January and again in March. It frequently entered the verandahs of houses close to the water. I also found the bird on the Chell River at Chak Chak in February and March. The rivers are rocky just at both these localities. Indeed, this Wagtail is hardly ever seen away from rocks.

12. **Motacilla alba** Linn.

a. ♀. Khartoum, 4.11.07.

The White Wagtails arrived at Khartoum in 1905 on October 21st. In 1906 I did not notice them till the 23rd, on the morning of which day they were plentiful. In 1907 I observed them on the 22nd. In the Bahr-el-Ghazal country I only noticed them at Chak Chak and at Meshra-el-Rek (April 12th, 1907). They all disappeared from Khartoum by the first week in May. They were common at Suakin and at Erkowit in March 1906.

13. **Motacilla melanope** Pall.

Since writing my first notes I have only seen the Grey Wagtail a few times in Khartoum—on Nov. 10th, 1905, Nov. 20th, 1906, Sept. 28th and 29th, 1907, and two or three times in November of the same year.

14. **Motacilla flava** Linn.

a. ♀. Khartoum, 5.11.07.
b. ♂. ,, 16.11.07.
c. ♂. ,, 2.11.07.
d. ♂. ,, ,,

15. **Motacilla borealis** Sundev.

a. ♂. Khartoum, 30.10.07.

16. **Motacilla cinereicapilla** Savi.

a. ♂. Gameiza, 8.4.07.

Owing to the thickly-forested nature of most of the country, and to the scarcity of water on the plains at the time of my visit, I saw very few Yellow Wagtails in the Bahr-el-Ghazal country. A quantity appeared at the pools in a "khor" between Chak Chak and Dem Zubeir on

March 11th, but the only other individual noticed was that shot at Gameiza on April 8th.

17. Anthus trivialis (Linn.).

a. ♂. Khartoum, 29. 9. 07.
b. ♂. „ 30. 9. 07.

I saw the Tree-Pipit a few times between Wau and Chak Chak in February and March. It was abundant at Khartoum at the end of September and in October 1907.

18. Anthus sordidus Rüpp.

a. ♂. Erkowit, 28. 3. 06.

The only specimen that I have met with. It was running actively about on boulders of rock at an elevation of nearly 4000 ft.

19. Anthus campestris (Linn.).

The Tawny Pipit was common at Suakin and on Erkowit in March 1906. I did not see it in the Bahr-el-Ghazal country.

20. Anthus cervinus (Pall.).

a. ♂. Khartoum, 28. 10. 07.
b. ♀. „ „
c. ♂. „ 30. 10. 07.

The same remarks apply to the Red-throated Pipit.

21. Alæmon alaudipes (Desf.).

a. ♂. Omdurman, 8. 11. 07.
b. ♂. „ „
c. ♂. „ „

All three of these individuals were in breeding condition.

22. Calandrella brachydactyla (Leisler).

a. ♂. Khartoum, 18. 11. 07.

23. Heliocorys modesta Heugl.

a. ♂ juv. Kuanga's, 2. 2. 07.
b. ♂ juv. Khor Gitti, 30. 1. 07.
c. ♀. Chak Chak Road, 10. 2. 07.
d. ♀. Wau, 23. 1. 07.
e. ♂. Khor Gitti, 31. 1. 07.

Between Wau and Chak Chak and thence towards Dem Zubeir this little Bush-Lark was fairly common on open patches and clearings in the forest. It was generally in parties of four or five, consisting of pairs of old birds with spotted young recently fledged. Its habits are those of a *Mirafra.*

24. Mirafra fischeri (Reichen.).

a. ♂. Makwak, 21.1.07.

This specimen was the only one seen during my Bahr-el-Ghazal trip. It was running about on a burnt dhurra clearing, and shewed considerable cunning, when pursued, in the way that it took advantage of what little cover there was, always keeping behind a few stems of the *Sorghum.*

25. Mirafra erythropygia (Strickl.).

a. ♂ (breeding). 20 miles E. of the Pongo, 3.2.07.
b. ♂ (apparently breeding). Pongo River, 5.2.07.
c. ♂ (not breeding). Pongo River, 5.2.07.
d. ♂ „ „ „
e. ♂ „ „ „

My notes on the Red-tailed Bush-Lark have already appeared in 'The Ibis' (1907, p. 467). Between Gardein and Wau, Wau and Chak Chak, and thence to Dem Zubeir it was numerous and quite the commonest of the Lark family.

26. Galerita cristata (Linn.).

a. ♂. Khartoum, 3.11.07.
b. ♂. „ 5.11.07.
c. ♂. „ 23.11.07.
d. ♂. „ 20.11.07.
e. ♂. „ 5.11.07.

Crested Larks were abundant at Suakin, round the town and along the sea-shore, when I was there in March 1906. They were equally plentiful up on Erkowit at 4000 ft. These were darker birds than the Khartoum form (*G. c. flava* Brehm), and *looked* to me very like the Assouan birds (*G. c. maculata* Brehm). I regret that I did not shoot any specimens. I saw no Crested Larks in the Bahr-el-Ghazal Province.

27. PYRRHULAUDA BUTLERI Shelley.
a. ♂. Omdurman, 8.11.07.
b. ♂. ,, ,,

Common in the desert behind Omdurman. I have never seen it on the Khartoum side of the river.

28. PYRRHULAUDA MELANAUCHEN (Cab.).

I found this the common Finch-Lark at Suakin and along the maritime plain to the south, between the mountains and the sea. I shot four or five specimens, but they were moulting, so I did not skin any.

They were identical with Captain Flower's birds, which I mentioned in 'The Ibis' for 1905, p. 311.

29. PYRRHULAUDA MELANOCEPHALA (Licht.).
a. ♂. Khartoum, 1.11.07.
b. ♂. ,, ,,
c. ♂. ,, 16.11.07.
d. ♀. ,, 31.10.07.
e. ♀. ,, 19.11.07.

I occasionally met with small parties of this Finch-Lark on the road between Meshra-el-Rek and Chak Chak, but they were distinctly scarce. I shot one male to examine at Chak Chak.

Mr. Grant ('Ibis,' 1907, p. 586) says :—"With one exception, which shews a trace of black feathers among the wing-coverts, all the birds from Khartoum in the British Museum appear to be typical *P. melanocephala*." I have seen many of the Khartoum birds almost daily for seven years, and more or less black—sometimes a very conspicuous patch—on the wing-coverts is the rule, as in birds from Berber, Merowe, and Shendi.

30. EMBERIZA FLAVIGASTRA Rüpp.
a. ♂. Pongo River, 3.2.07.

The Yellow-bellied Bunting was met with a few times between Wau and Chak Chak, but seemed scarce in this district.

31. EMBERIZA CÆSIA Cretzschm.

Cretzschmar's Bunting was abundant in the gardens at Suakin on March 20th, 1906, and on the summit of Erkowit during the next ten days. I did not see it in the Bahr-el-Ghazal country.

32. EMBERIZA SEPTEM-STRIATA Rüpp.

a. ♂. Erkowit, 29. 3. 06.

Common on the rocky *Euphorbia*-covered "kopjes" on the Erkowit plateau (March 1906). Abundant in March 1907 on rocky hills between Chak Chak and Dem Zubeir.

33. PETRONIA DENTATA (Sundev.).

a. ♀. Chak Chak, 18. 2. 07.
b. ♂. „ 9. 2. 07.
c. ♂ juv. „ 18. 3. 07.

The Lesser Rock-Sparrow was common between Wau and Chak Chak, and was especially abundant in the bush round the latter station. It is quite a *Bush*-Sparrow in habits.

34. PASSER DIFFUSUS (Smith).

a. ♂. Chak Chak, 9. 2. 07.

This Bush-Sparrow was abundant in the Bahr-el-Ghazal forests.

35. PASSER DOMESTICUS RUFIDORSALIS Brehm.

This form does not appear to extend to the Bahr-el-Ghazal.

I have one old female which shews a distinct dark patch on the throat, in this respect closely resembling a very young male.

36. SERINUS ICTERUS (Bonn. et Vieill.).

a. ♂. Wau, 24. 1. 07.
b. ♂. Chak Chak, 15. 2. 07.
c. ♂. Menyah, 16. 1. 07.

These Yellow-fronted Serin-Finches were met with very soon after leaving Meshra, and were common as far as Chak Chak. They were generally in company with other small birds, and shewed a preference for broad-leaved sycamore-like trees.

37. Serinus leucopygius (Sundev.).

I saw small parties of the White-rumped Grey Serin-Finch between Meshra and Chak Chak, but it was not nearly so common in that district as the green-and-yellow *S. icterus*.

38. Poliospiza canicapilla Du Bus.

a. ♀. Bringi's, 1.2.07.

Numbers of this Finch were collected to roost in some high trees behind Bringi's Village on the evening when I arrived there. I shot two or three, but they were in full moult, and I only kept one for identification. I did not meet with the bird again.

39. Vidua serina (Linn.).

Small flocks of this Widow-Bird, in winter plumage, were met with at Wau, Chak Chak, and the intermediate villages near water (February and March, 1907).

40. Steganura paradisea (Linn.).

Met with from Meshra to Chak Chak. I shot a male in full plumage at the latter station on Feb. 15th, but only saw individuals with long tails two or three times.

41. Coliopasser macrurus (Gm.).

a. ♂. Chak Chak, 28.2.07.

These Weavers, in winter plumage, were abundant in large flocks at the Khor Gitti, Kuanga's, the Pongo and Chell Rivers, &c., generally keeping to the vicinity of water. Except for their chrome-yellow, instead of orange, shoulders they looked very similar on the wing to the next species.

42. Urobrachya phœnicea (Heugl.).

Abundant in the papyrus- and grass-swamps along the Bahr-el-Ghazal River, but not seen after we started inland from Meshra.

43. Pyromelana franciscana (Isert).

a. ♂. Gardein, 5.4.07.
b. ♀. " "
c. ♂. Khartoum, 20.11.07 (breeding-plumage).

Met with in large flocks, in winter plumage, at various points between Meshra and Chak Chak.

44. SPERMESTES CUCULLATUS Swains.

a. ♂. Khor Gitti, 1. 2. 07.

I only saw the Bronze-shouldered Manikin once, a single bird which I shot at the Khor Gitti. It was associating with a flight of Weaver-Finches (*Pyromelana*).

45. UROLONCHA CANTANS (Gm.).

46. ESTRILDA PHŒNICOTIS Swains.

Both these birds were common from Meshra to Chak Chak, the latter especially so.

47. ESTRILDA CINEREA (Vieill.).

a. ♂. Chak Chak, 12. 2. 07.

Large flocks of the Common Black-rumped Waxbill were constantly met with from Meshra to Chak Chak. Mr. Middleton has sent it to me from Bor.

48. ESTRILDA PALUDICOLA Heugl.

a. ♂. Khor Kobshum, 5. 3. 07.
b. ♀. ,, ,, ,,
c. ♀. ,, ,, 6. 3. 07.

Heuglin's Waxbill was common near the Jur River and in the Khor Kobshum, south of Chak Chak. At the latter place we camped close to a large rock-pool, where the bushes round us were always alive with a chirping host of these little Waxbills during the heat of the day.

49. LAGONOSTICTA BRUNNEICEPS Sharpe.

I saw this Fire-Finch in the Bahr-el-Ghazal Province at Meshra, Wau, and Chak Chak.

50. LAGONOSTICTA LARVATA Rüpp.

Lagonosticta nigricollis Butler. Ibis, 1905. p. 321.

By a slip of the pen, I think, Captain Shelley gave me the name *L. nigricollis* as that of a little Finch which I shot at Gallabat on April 15th, 1903. In his 'Birds of Africa' (vol. ii. pt. i. p. 225) it is, however, identified, and correctly, as *Lagonosticta larvata,* but the date is wrongly given as March 13th, 1899, at which time I was in the Malay Peninsula.

51. Lagonosticta butleri Grant.

a. ♀. Chak Chak, 15. 2. 07. } Types.
b. ♀. „ 17. 2. 07. }

Fairly common in the forests from Wau to Chak Chak. I could have procured a good series had I known that the species was new, and it was rather a surprise to me that it proved undescribed. (See Grant, Bull. B. O. C. xxi. p. 16.)

52. Pytelia citerior Strickl.

a. ♂. Chak Chak Road, 12. 2. 07.
b. ♀. Pongo River, 5. 2. 07.

This Red-faced Finch was seen at most places where there was thorn-bush from Meshra to Chak Chak.

In the male specimen the red on the head surrounds the eye; there is no trace of the white bars becoming *spots* on the crop; the under tail-coverts are unbarred white; the flanks are barred with olive-brown and have a greenish suffusion.

In the female there is dull orange-red patch on each side of the forehead between the eye and the nostril; the chin and throat are ashy grey; the under tail-coverts are unbarred white.

This is much the most widely distributed form of *Pytelia* in the Soudan.

53. Pytelia soudanensis Sharpe.

a. ♂. Bor, Upper Nile, 7. 5. 06.

Collected for me by Mr. G. B. Middleton.

The red on the head only reaches to the front of the eye; there is rather more red on the throat than in *P. citerior* Strickl.; the white bars become twin *spots* on the crop; the flanks are white, more heavily barred with blackish brown, and with no greenish tinge; the lower tail-coverts are barred with brown.

The type of *Pytelia jessei* Shelley, which I examined in the Natural History Museum, appears to me identical with this bird.

54. Ploceipasser superciliosus (Rüpp.).

a. ♀. Chak Chak Road, 11. 2. 07.
b. ♂. Khor Gitti, 24. 3. 07.

This Sparrow-Weaver was abundant in the forest country from Ayûm to Chak Chak.

55. ANAPLECTES MELANOTIS (Lafr.).

I saw one or two males of an *Anaplectes*, probably one of the forms of this species, at the Khor Gitti in February, but did not manage to shoot a specimen. They were in breeding-plumage, with scarlet head and breast and black cheek-patches. I met with them in the forest only, where they entirely to the tops of the trees.

56. HYPHANTORNIS GALBULA Rüpp.

a. ♂. Erkowit, 24. 3. 06.

These Weaver-Birds were common at Suakin in April and May, breeding in the *Parkinsonia*-trees in the vegetable gardens outside the town. They were also abundant on Erkowit, nesting in trees in the ravines and valleys.

57. HYPHANTORNIS BADIUS Cassin.

a. ♂. Bor, 10. 5. 06.

I am indebted to Mr. G. B. Middleton, of the Steamers and Boats Department, Soudan Government, for a specimen of Cassin's Weaver-Bird in breeding-plumage. I have not come across it myself.

58. ORIOLUS AURATUS Vieill.

a. ♂. Near Wau, 28. 1. 07.

b. ♂. Khor Gitti, 30. 1. 07.

The African Golden Oriole was abundant between Wau and Chak Chak from January to March.

59. LAMPROTORNIS CAUDATUS (P. L. S. Müll.).

a. ♂. Wau, 24. 1. 07.

b. ♂. Chak Chak, 12. 2. 07.

This long-tailed Glossy Starling was common on the ironstone country between Wau and Chak Chak. This is the species, as Mr. Grant correctly surmises ('Ibis,' 1907, p. 581), which I met with near El Obeid in Kordofan, and which, I regret to say, I referred to in my previous paper ('Ibis,' 1905, p. 324) as "undoubtedly the true *L. æneocephalus*."

Further attention to the Soudan Starlings of this genus in the wild state, and an examination of the specimens in the Natural History Museum, have convinced me that Mr. Grant's remarks ('Ibis,' 1902, pp. 401–402) on the distinctions between, and the geographical distribution of, *L. porphyropterus* Rüpp. and *L. æneocephalus* Heugl. were perfectly correct, while the doubts I expressed ('Ibis,' 1905, p. 324) as to their distinctness were wrong. Indeed, the two birds can be distinguished at some distance, when one has become familiar with both.

60. Lamprotornis porphyropterus Rüpp.

a. ♂. Gardein, 7. 4. 07.

b. ♂. „ „

This was the common Glossy Starling on the open country between Meshra and Ayûm, but directly the forests of the ironstone country were reached its place appeared to be entirely taken by *L. caudatus* (P. L. S. Müll.).

61. Lamprotornis æneocephalus Heugl.

I noticed a pair of these Starlings in the town of Khartoum almost daily during October 1907. As a result of the growth of trees and gardens in the new Khartoum some bush-frequenting birds, such as this species, *Lophoceros nasutus*, and *L. erythrorhynchus*, may now be seen occasionally in the town itself, while others, such as *Colius macrurus*, which were there formerly, have greatly increased in numbers.

62. Lamprocolius sycobius (Licht.).

a. ♂. Chak Chak, 9. 2. 07.

b. ♂. Moyen, 21. 1. 07.

These Starlings were abundant from Ayûm to Chak Chak, assembling in large flocks to feed on the fruit of the *Ficus* locally known as "Gameiza."

63. Lamprocolius purpureus (P. L. S. Müll.).

a. ♂. Chak Chak, 20. 2. 07.

Abundant between Wau and Chak Chak. This Starling has a conspicuously large, prominent, and brilliant yellow eye.

64. Spreo superbus (Rüpp.).

M. de Vilmorin shewed me a skin of this Starling which he had obtained at Bor on the Upper White Nile in January 1906.

65. Corvus scapulatus Sundev.

When marching from Suakin to Kassala in 1906 I found the northward range of the White-bellied Crow very abruptly defined. There were hundreds round the wells at Jebel Maman, and after that it was met with everywhere to Kassala, thence to the Blue Nile and down that river. North of Jebel Maman I only saw a single individual—about thirty miles nearer Suakin. I believe that it is abundant at Tokar, but rare north of it. Mr. G. Kerr, who was Senior Inspector at Suakin, told me that he had seen the bird there once only. It was plentiful in the Bahr-el-Ghazal Province wherever I went. I saw no Black Crows there.

66. Corvus affinis Rüpp.

a. ♂. Erkowit, 24.3.06.

This broad-winged, short-tailed Raven was common on the heights along the Red Sea Railway towards Suakin, at Suakin, on Erkowit, and in the hill-country southwards. It was also met with on the hill at Kassala. Though mostly a highland species it often came down to our camps on the Suakin plain, in company with *Corvus umbrinus* Sundev., but I never saw the latter species up in the hills. *C. affinis* has a rather musical rolling croak, quite different to the voice of *C. umbrinus.*

67. Corvus umbrinus Sundev.

The Brown-necked Raven is plentiful on the maritime plain south of Suakin. It is very easily distinguished from *C. affinis* by its longer, narrower wings and longer tail.

68. Cryptorhina afra (Linn.).

a. ♂. Tewfikia, 10. 1. 07.
b. ♀. ,, ,,
c. ♀. ,, ,,
d. ? ,, ,,

On landing at the little station of Tewfikia on Jan. 10th

I was greatly surprised to find these birds established there in considerable numbers. They were very tame and familiar, walking about fearlessly close to the houses, sitting in rows on the corrugated-iron roofs, or collecting in parties in the *Borassus* palms. They watched our donkeys being landed from the steamer for a run, and followed them about, settling on their backs like Starlings.

In one place a group of about a dozen were evincing the greatest excitement over a wind-blown scrap of pink paper which had aroused their curiosity. I have never seen the bird on this part of the White Nile before, and when I visited Tewfikia in February 1902 and February 1905 there were certainly none there.

A few miles from Tewfikia the American Mission has a station at a beautiful group of "Doleib" palms (*Borassus*), and I hear that these birds are abundant there now. I knew the spot before the Mission Station was established and never saw one there. In the Bahr-el-Ghazal Province they were generally in evidence wherever there were "Doleib" palms, a native village, and domestic animals. I noted them constantly from Mayik to the Pongo. I think that they would make capital aviary birds, as they are naturally bold and inquisitive, and have an engagingly jaunty manner. I did not notice them attending game animals in the same way that they follow donkeys and cattle. The colouring of the bill appears to be dependent on age and not sex. Of my four birds, a male and a female had the flesh-coloured bills, and a female and a bird of doubtful sex black bills.

69. DICRURUS AFER (Licht.).

a. ♀. Chak Chak, 12. 2. 07.

This Drongo-Shrike was abundant from Meshra to Chak Chak.

70. PRIONOPS POLIOCEPHALUS (Stanley).

a. ♂. } Khor Gitti, 30. 1. 07.
b. ♂. }

c. ♀. Moyen, 3. 4. 07.

This Helmeted Shrike was common between Wau and

Chak Chak, generally in parties of seven or eight individuals.

71. Graucalus pectoralis Jard. & Selby.

a. ♂. Khor Gitti, 30. 1. 07.
b. ♀. Wau, 24. 1. 07.
c. ♀. Near Chak Chak, 19. 3. 07.

These Cuckoo-Shrikes were fairly common in the Bahr-el-Ghazal forests along our line of march.

72. Corvinella corvina (Shaw).

a. ♀. Chak Chak, 13. 2. 07.
b. ♀. „ 15. 2. 07.
c. ♀. „ 17. 2. 07.
d. ♀. Khor Gitti, 31. 1 07.
e. ♀. „ 24. 3. 07.

These birds were constantly met with in the forests between Wau and Chak Chak, generally in parties of seven or eight, which played a game of "follow my leader" among the tree-tops. They were nearly always remarkably wary and it was difficult to get within shot of them.

C. affinis Heugl., the Eastern form, to which my birds belong, seems hardly specifically separable from *C. corvina* Shaw, with which Dr. Reichenow has united it.

73. Fiscus excubitorius (Des Murs).

a. ♂. Chak Chak, 17. 2. 07.

This gregarious Shrike was very much in evidence in the open country from Meshra to Wau, sitting in rows on the telegraph-wires. It was also common along the Pongo and Chell Rivers.

74. Lanius leuconotus C. L. Brehm.

L. leuconotus was common at Suakin and Erkowit in March 1906. It was not noticed in the Bahr-el-Ghazal Province.

75. Lanius nubicus Licht.

The same remarks apply to this species as to the last.

76. Lanius paradoxus Brehm.
a. ♀. Gardein, 17.1.07.
b. ♂. Moyen, 2.4.07.
c. ♂. Ayûm, 27.2.07.

Brehm's Woodchat-Shrike was very common all along our route in the Bahr-el-Ghazal country, wherever it was not thick forest.

77. Lanius isabellinus Hemp. & Ehr.
a. ♂? Kenisa, Feb. 06.
b. ♂. Khartoum, 30.10.07.
c. ♂. ,, ,,

I found the Isabelline Shrike common between Suakin and Erkowit in March and April 1906. M. de Vilmorin gave me the specimen from Kenisa (Upper Nile). I saw it several times in Khartoum in October and November, 1907.

78. Nilaus afer (Lath.).
a. ♂. Chak Chak, 28.2.07.
b. ♀. Moyen, 22.1.07.

Met with at intervals on our Bahr-el-Ghazal journey, but not plentifully.

79. Dryoscopus malzacii (Heugl.).
a. ♂. Near Chak Chak, 7.3.07.
b. ♀. ,, ,, 12.2.07.
c. ♂ juv. ,, ,, 15.2.07.

This Wood-Shrike was not uncommon in the forests near Chak Chak. It moved quietly about the branches searching for insects, and reminded me strongly of an old acquaintance, *Tephrodornis pondicerianus*.

80. Laniarius æthiopicus (Gm.).

The Ethiopian Bush-Shrike was common from Ayûm to Wau, and on to Chak Chak.

81. Laniarius catharoxanthus (Neum.).
a. ♂. Kuanga's, 23.3.07.
b. ♂. Wau, 23.1.07.
c. ♀. Chak Chak, 21.2.07.

This Grey-headed Bush-Shrike was frequently met with in pairs, between Wau and Chak Chak, but was much scarcer than *L. erythrogaster.*

82. LANIARIUS SULPHUREIPECTUS (Less.).

a. ♂ juv. Bringi's, 1.2.07.

I only met with this Bush-Shrike three times, once at Bringi's and twice near Chak Chak. It had a loud whistle of four notes. My specimen is in the first plumage and has the lower surface uniform yellow, with no trace of orange.

83. LANIARIUS ERYTHROGASTER Cretzschm.

a. ♀. Chak Chak, 14.2.07.

The Scarlet-breasted Bush-Shrike was a common bird wherever we travelled in the Bahr-el-Ghazal country.

Marching south from Suakin in 1905 I did not see it until I reached the cotton-soil country just south of Jebel Maman. From there to the Blue Nile it was met with wherever there was bush.

84. TELEPHONUS BLANFORDI Sharpe.

a. ○. Bor, Upper Nile, Jan. 06.

b. ♀. Pongo River, 3.2.07.

This Bush-Shrike was common between Wau and Chak Chak. The specimen from Bor was obtained for me by M. de Vilmorin.

85. TELEPHONUS MINOR Reichen.

a. ♀. Bor, Upper Nile, 1905.

Kindly sent to me by Mr. Middleton.

86. RHODOPHONEUS CRUENTUS (Hempr. & Ehr.).

a. ♀. Khor Dahand, 22.3.06.

b. ♂. „ „

c. ♀. Erkowit, 29.3.06.

This beautiful Bush-Shrike was common on the plain south of Suakin and rather less so on the Erkowit plateau. Its habits are something between those of *Telephonus* and *Argya,* and like the latter it associates in small parties. This, the extreme eastern side of the country, is the only locality in which I have met with it, but Capt. H. N. Dunn, R.A.M.C., procured it at some wells in Western Kordofan.

87. ARGYA ACACIÆ (Licht.).

a. ♀. Khor Dahand, Suakin, 22. 3. 06.

Lichtenstein's Desert-Babbler is common in the scrub along the plain between the hills and the sea south of Suakin. It does not ascend the hills at all, so far as my observation goes.

88. CRATEROPUS PLEBEIUS (Rüpp.).

a. ♂. Buval, 28. 1. 07.

These Babbling-Thrushes were common between Wau and Chak Chak. They were as noisy and excitable as most birds of their genus. I caught and released a newly fledged bird at the Khor Gitti on Jan. 30th.

89. PYCNONOTUS TRICOLOR MINOR Heugl.

a. ♂. Bor, Feb. 1906.

b. ♂. Bahr-el-Ghazal River, 12. 1. 07.

c. ♀. ,, ,, ,,

This Bulbul was common along the Bahr-el-Ghazal River and from Meshra to Chak Chak. I am not clear as to the point where it replaces *P. arsinoë* on the White Nile. I am indebted for the specimen from Bor to M. de Vilmorin.

90. EREMOMELA ELEGANS (Heugl.).

a. ♀. Chak Chak, 15. 2. 07.

b. ♂. Dug Dug, 19. 1. 07.

These daintily-coloured little Warblers were common both among scattered trees in the open country between Meshra and Wau and in the forests between Wau and Chak Chak.

91. CAMAROPTERA BREVICAUDATA (Rüpp.).

Common in the Bahr-el-Ghazal Province between Ayûm and Chak Chak.

92. SYLVIELLA BRACHYURA Lafr.

a. ♂. Gameiza, 8. 4. 07.

This little bird was common in the trees on the open alluvial plain inland from Meshra, but I never saw it after reaching the wooded ironstone country.

93 Cisticola strangii (Fraser).

a. ♂. Khor Kobshum, 8.3.07.

The only specimen identified.

94. Cisticola rufa (Fraser).

a. ♂. Near Chak Chak, 4.3.07.

Very abundant in the grassy khors south of Chak Chak.

95. Cisticola ruficeps (Rüpp.).

a. ♂. Chak Chak, 20.2.07.

b. ♀. Fashoda, 9.1.07.

The Rufous-headed Grass-Warbler was common in suitable localities from Meshra to Chak Chak.

The closed tails of these two specimens have a very different appearance from beneath. In the male the black subterminal bars on the lower surface of the rectrices are very distinct; in the female they only shew through indistinctly on the under surface and are overlapped by the white tips of the next pair of feathers, so that the closed tail appears uniformly whitish below.

96. Cisticola marginalis (Heugl.).

a. ♂. Chak Chak, 27.2.07.

b. ♀. Fashoda, 9.1.07.

These Warblers were, as usual, abundant in the herbage along the river-bank at Fashoda, when I landed there in January. I met with them again at Meshra-el-Rek and on the Chell River.

Mr. G. B. Middleton has sent me a skin of this bird from Bor, Upper Nile.

97. Cisticola wellsi Grant.

a. ♀. Pongo River, 23.2.07. (Type.)

Obtained at Bedari's Village. Only one individual noticed. Apparently a bush-frequenting species, and not a grass-bird. (See Grant, Bull. B. O. C. xxi. p. 17.)

98. Cisticola butleri Grant.

a. ♂? Chak Chak, 17.2.07. (Type.)

Described by Mr. Grant from the single specimen that I obtained at Chak Chak. It was creeping about among thick thorn-bushes, and was the only one met with. (See Grant, Bull. B. O. C. xxi. p. 17.)

99. Cisticola cinerascens (Heugl.).

a. Doleiba, 19. 1. 07.

My specimen was picked up dead on a path running through high grass.

100. Cisticola ferruginea Heugl.

a. ♀. Chak Chak, 23. 2. 07.
b. ♂. Moyen, 10. 2. 07.

These beautiful little Warblers are very plentiful in the open forest and bush on the ironstone country in the Bahr-el-Ghazal. I noticed them directly we reached the ironstone at Ayûm, and thence all along the road to Chak Chak. While hopping about among the upcropping rocks strewn with brown dead leaves, they harmonize with their surroundings wonderfully. They are also very arboreal in their habits, working up high into the trees, but they do not frequent grass much. A better name than *ferruginea* could hardly have been chosen for this species.

101. Melocichla mentalis (Fraser).

a. ♂. Khor Kobshum, 4. 3. 07.
b. ♂. ,, 8. 3. 07.
c. ♂. ,, 9. 3. 07.
d. ♂. ,, 8. 3. 07.
e. ♀. ,, 4. 3. 07.

These large Broad-tailed Warblers were fairly common in patches of high grass in the Khor Kobshum between Chak Chak and Dem Zubeir. They are birds of extremely skulking habits, clinging most tenaciously to the smallest patch of cover when alarmed. I got most of my specimens by burning these patches and taking a flying shot at the birds as they fluttered jerkily towards the next cover.

102. Cercotrichas podobe (P. L. S. Müll.).

I found the Black Bush-Robin common in the bush near Suakin, near Kassala, and along the Atbara. I never saw it in the Bahr-el-Ghazal Province.

103. Acrocephalus phragmitis (Bechst.).

a. ♂. Khartoum, 28.9.07.

I have only seen the Sedge-Warbler a few times in Khartoum. I picked up this specimen under a telegraph-wire, against which it must have flown during the night.

104. Phylloscopus rufus (Bechst.).

a. ♂ juv. Khartoum, 28.10.07.
b. ♂. „ 29.10.07.

I saw quantities of Chiffchaffs at Gameiza in the Bahr-el-Ghazal Province on April 8th, 1907, and shot one for identification.

105. Phylloscopus trochilus (Linn.).

a. ♂. Khartoum, 30.10.07.

106. Phylloscopus bonellii (Vieill.).

a. ♀. Khartoum, 2.10.07.

I think that there were a good many Bonelli's Warblers about in Khartoum at this date, among the Chiffchaffs.

107. Sylvia hortensis Linn.

a. ○. Khartoum, 2.10.07.

I saw the Garden-Warbler in Khartoum several times on and shortly after this date.

108. Sylvia momus (Hemp. & Ehr.).

a. ♂. Erkowit, 25.3.06.

I often saw this species on the Erkowit plateau in March and April, 1906.

109. Sylvia curruca (Linn.).

a. ♀. Erkowit, 25.3.06.
b. ♂. Khartoum, 2.11.07.
c. ♂. „ 15.11.07.

The Lesser Whitethroat was very common on the Erkowit plateau in March and April 1906.

110. Aëdon galactodes (Temm.).

a. ♀. Erkowit, 24.3.06.

Common round Suakin in April and May and up to the top of Erkowit Hill. I saw it occasionally between Wau and Chak Chak during the same months in 1907, but it was scarce in that district.

111. Erythropygia ruficauda Sharpe.

a. ♀. Between Chak Chak and Dem Zubeir, 5.3.07.

This was the only specimen of this pretty Warbler that I saw. In habits and carriage it resembled a small *Aëdon.*

112. Cichladusa guttata (Heugl.).

a. ♂. Gardein, 18.1.07.

The specimen shot at Gardein was hopping about in a thick "Heglik" thorn-tree and singing loudly. I also saw the bird once between Chak Chak and Dem Zubeir, and again at Gardein on my return journey in April.

113. Cossypha heuglini Hartl.

a. ♂. Khor Gitti, 29.1.07.

Heuglin's Chat-Robin was fairly plentiful at the Khor Gitti, keeping to the cover of the dense bushes which overhung the damp mud along the edge of the stream. It was shy and difficult to shoot. I did not see it anywhere else, but Best got a specimen on a khor between Chak Chak and Dem Zubeir.

114. Cossypha verticalis Hartl.

a. ♂. Roseires, Blue Nile, May 1905.

I am indebted to Mr. G. B. Middleton for my only specimen of this bird, which I have not myself met with.

115. Pratincola rubetra (Linn.).

a. ♂ juv. Khartoum, 30.9.07.
b. ♂ juv. „ 4.11.07.

I saw the Whinchat five or six times near Khartoum in the winter of 1907.

116. Ruticilla phœnicurus (Linn.).

a. ♂. Khartoum, 7.10.07.
b. ♂. „ 23.10.07.
c. ♂. „ 1.11.07.
d. ♂. „ 2.11.07.
e. ♀. Chak Chak, 7.3.07.

Redstarts were common on Erkowit in March and April,

1906. They were very abundant everywhere in the Bahr-el-Ghazal Province, scores being seen daily between January 14th and April 12th. Great numbers seem to winter in that part of the country.

117. Luscinia luscinia (Linn.).

a. ♀. Bahr-el-Ghazal River, 12. 1. 07.

A single bird, shot at a place where the steamer stopped for wood, was the only Nightingale seen during our journey in the Bahr-el-Ghazal country.

118. Luscinia golzi (Cab.).

a. ♂. Khartoum, 28. 9. 07.
b. ♀. „ 23. 10. 07.

Numbers of Persian Nightingales arrived in Khartoum in September 1906 and September 1907, but, as usual, all seemed to have moved on by the end of October. I think that the main body of them go much further south. I was interested to ascertain whether I should find them settled down for the winter in the Bahr-el-Ghazal Province, but I only saw one Nightingale during that trip, which proved to be *L. luscinia.*

119. Cyanecula suecica (Linn.).

a. ♂. Khartoum, 5. 11. 07.

Khartoum does not seem to lie in the Bluethroat's regular line of migration. I have, I think, only noticed the bird there twice.

120. Turdus musicus Linn.

I saw a single Song-Thrush in the Public Gardens at Khartoum on Dec. 17th, 1907. It allowed me to approach and inspect it closely, and I did not think it necessary to shoot it. I have never seen one in the Soudan before, and imagine that its occurrence so far south is exceptional.

120 *a.* Turdus pelios Bp.

a. ♂. Wau, 25. 1. 07.
b. ♂. Chak Chak, 11. 2. 07.

The Ethiopian Thrush was tolerably common between Wau and Chak Chak.

121. Monticola saxatilis (Linn.).

a. ♂. Near Chak Chak, 8.3.07.
b. ♀ juv. Near Chak Chak, 12.2.07.
c. ♂ juv. Khartoum, 1.10.07.

Only met with twice on our Bahr-el-Ghazal journey, in clearings in the forest; but the country is not well suited to its habits. The male was nearly in full plumage, the female immature.

122. Saxicola œnanthe (Linn.).

a. ♂. Mayîk, 15.1.07.
b. ♂. Gardein, 18.1.07.
c. ♂. Khartoum, 13.11.07.
d. ♂. " 14.11.07. (*d.* The large form *S. œ. leucorrhoa.*)
e. ♂. " 3.11.07.
f. ♂. " "
g. ♀. " 31.10.07.
h. ♂. " 29.10.07.
i. ♂. " 31.10.07.

In the Bahr-el-Ghazal I found the Common Wheatear abundant everywhere except in thick forest from Meshra to Chak Chak. The bird shot at Mayîk was in very worn and grey plumage, and very white on the under surface.

123. Saxicola heuglini Finsch & Hartl.

a. ♂. Mayîk, 15.1.07.

This dark-coloured Wheatear was common on the plain between Meshra and Ayûm, but not noticed anywhere else. The birds were generally in pairs and had a habit of hovering in the air somewhat like Bush-Larks.

124. Saxicola melanoleuca (Güld.).

a. ♂. Khartoum, 2.10.07.

Noticed twice at Khartoum in October 1907. This is the Eastern Black-throated Chat (*Saxicola melanoleuca typica*), with the entire throat from chin to breast black.

125. Saxicola pleschanka (Lepech.).

a. ♂. Khartoum, 31.10.07.
b. ♀. „ 12.11.07.
c. ♂. „ 31.10.07.
d. ♀. „ 1.11.07.
e. ♀. „ 29.10.07.

I saw this Wheatear perhaps a dozen times in Khartoum in October and November, 1907.

126. Saxicola isabellina Cretzschm.

a. ♂. Khartoum, 3.11.07.
b. ♂. „ 11.11.07.

The Isabelline Wheatear arrived at Khartoum in considerable numbers during the first few days of November 1907.

127. Saxicola deserti (Temm.).

a. ♂. Khartoum, 2.11.07.
b. ♂. „ 19.11.07.
c. ♂. „ 2.11.07.
d. ♂ juv. „ 13.11.07.
e. ♂ juv. „ „

There was a noticeable immigration of Desert Wheatears at Khartoum in November 1907.

128. Saxicola leucopygia Brehm.

a. ♂ juv. Khor Ashat, April 1906.

The southward range of this Chat seems to terminate between the 18th and 19th degrees N. of the Equator. I found it common in April 1906 in the ravines in the barren Gamilab Hills south of Erkowit; and a friend, Mr. W. R. G. Bond, tells me that it is common on the Nile, south of Merowe, where he saw a pair building on January 18th, 1906.

129. Myrmecocichla leipura (Hempr. & Ehr.).

a. ♂. Erkowit, 27.3.07.

Common in April and May on the Erkowit plateau. (See note on *Bradyornis pumilus* Sharpe.)

130. **Melænornis edolioides** (Swains.).
a. ♂. Chak Chak, 8. 3. 07.
b. ♂. Wau, 24. 1. 07.

A common bird between Wau and Chak Chak.

131. **Bradyornis pallidus** (V. Müll.).
a. ♂. Pongo River, 6. 2. 07.
b. ♂. Chak Chak, 27. 2. 07.
c. ♀. Near Chak Chak, 17. 3. 07.

Common in forest between Wau and Chak Chak.

132. **Bradyornis pumilus** Sharpe.
a. ♂. Erkowit, 26. 3. 06.

This bird was common on the Erkowit plateau in March and April, frequenting the Euphorbias in company with *Myrmecocichla leipura.* Small parties of six or seven individuals generally contained both species. The two birds are extremely similar in appearance, except for the blackish upper tail-coverts of *M. leipura.* I admit that at first I took them for the same species.

133. **Muscicapa grisola** Linn.
134. **Muscicapa atricapilla** Linn.

When I returned to Khartoum from leave on Sept. 25th, 1907, I found that both Spotted and Pied Flycatchers had already arrived, the former in large, and the latter in small numbers. As usual, they disappeared again after a fortnight or so, and by the end of October the whole neighbourhood might have been searched without the slightest chance of seeing a specimen of either.

135. **Hyliota flavigastra** Swains.
a. ♂. Pongo River, 22. 3. 07.
b. ♂ juv. Moyen, 21. 1. 07.
c. ♀. Khor Gitti, 31. 1. 07.

Fairly common in the ironstone forest-country. Generally found in small parties, associating with mixed assemblages of small birds engaged in searching the foliage for insects.

136. **Batis orientalis** Heugl.
a. ♀. Chak Chak, 15. 2. 07.

I saw this little Flycatcher several timas on Erkowit in

March 1906. It was common everywhere in the part of the Bahr-el-Ghazal Province that I visited.

137. Elminia teresita Antin.

a. ♂. Chak Chak, Feb. 1907. (Skin lost.)

I came across this beautiful little Flycatcher once only, in a large tree overhanging the river at Chak Chak. It was continually in motion, spreading its wings and tail as restlessly as a *Rhipidura*. The bird was rather badly injured by my shot, and I spent a long time in cleansing its delicate plumage and making a very perfect skin of it; but on unpacking my collection at Khartoum this one specimen proved to be unaccountably missing.

138. Terpsiphone cristata (Gm.).

a. ♂ ad. Near Wau, 25. 4. 07.
b. ♂ juv. Wau, 24. 1. 07.

I met with this Paradise Flycatcher only near Wau and at the Khor Gitti. It was rather scarce, and I only saw adult males two or three times.

139. Empidornis semipartitus (Rüpp.).

a. ♀. Amien, 15. 1. 07.
b. ♂. Gardein, 17. 1. 07.
c. ♂. ,, ,,
d. ♀. ,, 7. 4. 07.
e. ♂. ,, ,,

This Grey-and-Rufous Flycatcher seemed very local. It was numerous among the trees at Gardein, but I only saw it at one other place—Amien,—a single individual. It is a quiet little bird and feeds more by watching the ground for insects and dropping down from its perch to catch them than by pursuing them in the air.

140. Cotile riparia (Linn.).

141. Cotile minor Cab.

a. ♂. Khartoum, 25. 10. 07.
b. ♀. ,, ,,

142. COTILE SHELLEYI Sharpe.

a. ♀. Khartoum, 6.11.07.

Both *C. riparia* and *C. shelleyi* are abundant at Khartoum in the winter, and large flocks of either or both species may often be seen hawking over the river or over the crops near it. *C. minor,* though always present in the winter, is much scarcer. It keeps more exclusively to the river-banks, in which it breeds in the spring, than the other two species, and does not seem to accompany them inland at all. At the margin of the river I have seen all three of these species on the wing together. *C. riparia,* shot between Meshra and Wau in March, was the only Sand-Martin that I met with in the Bahr-el-Ghazal.

143. PTYONOPROGNE OBSOLETA (Cab.).

a. ♀. Erkowit, April 1906.

This little Cliff-Swallow was common at Suakin in March and April, and also up on Erkowit, where it freely entered the houses. My specimen from Suakin appears to be slightly darker than an Assouan bird and to have a bronze or greenish lustre on the wings instead of a purplish one. The difference is slight, but it struck me that the birds looked a little browner and less grey than Egyptian examples when on the wing. Mr. Grant, however, puts my specimen down as *C. obsoleta* without comment.

144. HIRUNDO RUSTICA Linn.

Frequently seen in the Bahr-el-Ghazal Province in February and March.

145. HIRUNDO ÆTHIOPICA Blanf.

I noticed the Abyssinian Swallow frequenting some of the mud-built rest-houses between Meshra and Wau in March and April.

146. HIRUNDO SMITHI Leach.

a. ♂. Chak Chak, 16.2.07.

I noticed the Wire-tailed Swallow in pairs on the Jur River at Wau, and on the Chell River at Chak Chak, where they were nesting among the rocks in March.

147. Hirundo domicella Finsch & Hartl.

a. ♂.
b. ♀. } Bahr-el-Ghazal River, 12.1.07.

This Swallow was abundant over the Bahr-el-Ghazal River and wherever there was water between Meshra-el-Rek and Chak Chak.

148. Cypselus apus (Linn.)?

Swifts, which looked like *C. apus*, were several times seen flying over the open country between Meshra and Wau in February, but they were always too high in the air for me to obtain a specimen.

149. Cypselus affinis Hardw.

This White-rumped Swift was plentiful among the gorges in the hills of the Gamilab country south of Suakin in April and May, 1906.

150. Tachornis parva (Licht.).

This little Swift was common in the Bahr-el-Ghazal country wherever there were Doleib palms.

151. Caprimulgus eximius Temm.

On April 1st, 1905, I bought two small half-fledged young of this Nightjar from an Arab urchin who had found them near Khartoum. I never imagined that there was any likelihood of their living, but, being anxious to give them a chance, fed them at meal-times by cramming them with bits of fish, egg, omelette, mince, &c. To my great surprise they throve, and by the 16th could fly fairly well. That night, however, I found one of them dead. On the 18th I released the survivor in my garden at dusk. I flushed it once the next day, but never saw it again. I fear that it must have died through not being able to catch food for itself.

152. Caprimulgus ægyptius (Licht.).

a. ♂. Khartoum, 18.10.07.

153. Macrodipteryx longipennis Shaw.

a. ♀. Gardein, 6.4.07.

b. ♂. Khor Kobshum, 5. 3. 07.
c. ♂. Gardein, 6. 4. 07.
d. ♂. Kuanga's, 23. 3. 07.

The Standard-winged Nightjar is locally migratory in the Soudan, its movements being probably dependent on the supply of water, near which it is generally found. After leaving Meshra-el-Rek on January 15th, I did not see a single Standard-wing until March 5th (south of Chak Chak). On my return journey after that date I met with it almost every day, and along the road to Meshra it was quite numerous. It was especially plentiful round Gardein, where on April 4th, 5th, and 6th there were literally dozens on the wing in the dusk of the evening around a few pools of water. On these three evenings I sat by the pools and watched the beautiful birds gliding and wheeling round me within a few yards. I think that this "gathering of the Standards" was one of the most remarkable sights of bird-life that I have ever seen.

Though I repeatedly came on them at rest in the daytime, I have never yet seen a bird sitting with the "standards" erect.

A *female* shot at Gardein on April 5th had the ninth primaries noticeably narrower than the others, and on these feathers the chequer markings were blurred and indistinct. Other females examined shewed no peculiarity in the feathers to correspond with the "standards" of the male.

154. SCOTORNIS CLIMACURUS (Vieill.).

The Long-tailed Nightjar was abundant on the Bahr-el-Ghazal River and from Meshra to Chak Chak. I came across its eggs several times in February and March, once or twice on quite open ground, where the sitting bird was exposed to the full heat of the sun.

155. EURYSTOMUS AFER (Lath.).

a. ♂. Khor Gitti, 24. 3. 07.

The only example of this species that I saw was on my Bahr-el-Ghazal trip.

156. Coracias nævius Daud.

a. ♂. Pongo River, 4. 2. 07.

I met with these handsome Rollers, either singly or in pairs, on some eight or nine occasions, at the village of Sheikh Zaid, on the Pongo, and between that river and Chak Chak. They were extremely wary and watchful, and, in spite of repeated attempts, I never managed to approach within range of any but the one that I shot.

157. Coracias garrulus Linn.

a. ♂. Khartoum, 23. 10. 07.

The Common Roller arrived in Khartoum in larger numbers than usual this year (1907), and during October a dozen of them might often be seen together.

158. Coracias abyssinicus Bodd.

a. ♀. Khartoum, 20. 10. 07.

b. ♂. „ 24. 10. 07.

The Abyssinian Roller was common all along the White Nile up the Bahr-el-Ghazal, and from Meshra to Chak Chak.

159. Dicrocercus furcatus (Stanl.).

a. ♀. Pongo River, 4. 2. 07.

b. ♂. „ „

c. ♀. „ 3. 2. 07.

I only met with these pretty Swallow-tailed Bee-eaters a few times near the Pongo River, and again at Ofio's Village near Chak Chak. They were generally in pairs and kept to the tops of high trees in the forest. I never saw them hawking over the rivers as most Bee-eaters are so fond of doing.

160. Merops frenatus (Hartl.).

a. ♀. Pongo River, 4. 2. 07.

b. ♀. Chak Chak, 24. 2. 07.

These gaudy Bee-eaters are great lovers of water. They were extraordinarily plentiful on the Jur, Pongo, and Chell Rivers.

161. Merops pusillus P. L. S. Müll.

I saw this little Bee-eater at intervals the whole way from Khartoum to Chak Chak on my Bahr-el-Ghazal trip.

162. Merops viridis Linn.

The Green Bee-eater was met with occasionally between Wau and Chak Chak.

163. Merops nubicus Gm.

The Red Bee-eater was very abundant as far as I travelled in the Bahr-el-Ghazal.

164. Upupa epops Linn.

Hoopoes were very numerous on the Erkowit plateau during the last ten days of March 1906. A dozen or twenty of them would often be in sight at the same time. I also saw them in Suakin. In the Bahr-el-Ghazal country they were scarce along the route which I followed; I only saw about half a dozen in all.

165. Irrisor erythrorhynchus (Lath.).

a. ♂. } Wau, 25. 1. 07.
b. ♂ juv. }

These Red-billed Wood-Hoopoes were frequently seen along our route in the Bahr-el-Ghazal Province, usually near clearings or in the more open parts of the forest. I also saw them in some of the "khors," where there were palms, between Suakin and Kassala, and located an inaccessible nest in May 1906. It was in a neat round hole in a rotten palm, some twenty-five feet from the ground.

166. Scoptelus notatus Salvin.

This Wood-Hoopoe was scarce in the country we traversed in the Bahr-el-Ghazal Province. I only noted it at Doleiba and Bîr-el-Girûd.

167. Bucorvus abyssinicus (Bodd.).

The Abyssinian Ground Hornbill was frequently met with in small parties of four or five, at various points between Meshra and Chak Chak.

168. Lophoceros nasutus (Linn.).

169. Lophoceros erythrorhynchus (Temm.).

Both these small Hornbills were frequently noticed on our march in the Bahr-el-Ghazal.

170. Ceryle rudis (Linn.).

The Pied Kingfisher was common on the Bahr-el-Ghazal, Jur, Pongo, and Chell Rivers.

171. Ceryle maxima (Pall.).

The Great Spotted Kingfisher was not uncommon on the Jur, Pongo, and Chell Rivers, and was also seen at the Khor Gitti.

172. Corythornis cyanostigma (Rüpp.).

a. ♂. Chak Chak, 21. 2. 07.

The little Malachite-crested Kingfisher was common at all the rivers and khors which held water in the part of the Bahr-el-Ghazal country through which we passed.

I did not see *Ispidina picta* (Bodd.) on this journey.

173. Halcyon semicæruleus (Forskål).

Occasionally met with all along our line of march in the Bahr-el-Ghazal, but not plentifully.

174. Halcyon chelicutensis (Stanl.).

a. ♂. Chak Chak, 17. 2. 07.

Noted at intervals from Meshra-el-Rek to Chak Chak, but not commonly.

175. Colius macrurus (Linn.).

On October 13th, 1905, and for a few days afterwards, I saw a pied example of this Coly, with the back, wings, and tail mostly white, among a flock in Khartoum. Blue-naped Colies were plentiful in the gardens at Suakin in April 1906. They were constantly met with along our line of march in the Bahr-el-Ghazal Province. These Colies are at present quite abundant in Khartoum, their numbers having greatly increased with the growth of trees and gardens.

In captivity they are most charming birds. Their attitudes are extraordinary and they often suspend themselves under their perches like *Loriculi*, always crowding together into as compact a bunch as possible. One characteristic position is to let themselves down behind the twig on which they are perched until only their bills and eyes appear over the top of it. A row of them will maintain this position for an hour at a time—looking precisely as if they were drawing themselves up to the chin on a horizontal bar.

176. TURACUS LEUCOLOPHUS Heugl.

a. ♀. Chak Chak, 16.2.07.
b. ? Pongo River, 5.2.07.
c. ♂. Khor Gitti, 30.1.07.
d. ♀. ,, ,,
e. ♂. ,, 29.1.07.
f. ♂. Chak Chak, 16.2.07.

We first came across the White-crested Turaco in the forests near the Khor Gitti. From there to Chak Chak it was fairly common.

These beautiful Plantain-eaters are shy birds, keeping to the higher forest and feeding on berries. Trees overgrown with parasitic creepers form their favourite shelter. I generally saw them in pairs or parties of four or five, but once or twice I found as many as a dozen gathered together on some tree in fruit. They have a variety of croaking cries, but are not nearly such noisy birds as the *Schizorhis*. Sometimes, in the shade of the forest, their wings appear of quite a bronzed chestnut colour, and they might in flight almost be taken at a distance for some white-headed species of *Centropus*, but in the full sunlight the vivid crimson of the wings shews most conspicuously. The Golo natives called the bird "Kombo."

177. SCHIZORHIS ZONURA Rüpp.

a. ♂. Pongo River, 4.2.07.

These noisy and conspicuous Grey Plantain-eaters were abundant from Ayûm to Chak Chak. They are as active as a squirrel in running along branches, and are extraordinarily good runners on the ground. At Dud Majok I noticed a bird which had injured its wing and was sitting in a small tree by itself. The Jur natives who were with me shook it to the ground, but it dodged three of them for quite a couple of hundred yards before they managed to catch it.

178. Centropus monachus (Rüpp.).

a. ♀. Lake No, 9. 2. 06.

I am indebted to M. de Vilmorin for this specimen.

One species of *Centropus* was common in the Bahr-el-Ghazal from Meshra to Chak Chak, but I can find no note of having identified it.

179. Coccystes glandarius (Linn.).

a. ♂. Erkowit, 25. 3. 06.

b. Dud Majok, 31. 3. 07.

Scarce. Those noted above, and two or three seen near Renk on the White Nile in March 1905, are the only specimens that I have seen in the last three years.

180. Coccystes jacobinus (Bodd.).

a. ♀. Bor, Upper Nile, 7. 5. 06.

b. ♀. ,, ,, ,,

On October 5th, 1905, Mr. W. G. Percival brought me alive a newly fledged Pied Crested Cuckoo, obtained just north of Khartoum. *Argya acaciæ* (Licht.) would, in this locality, seem the most probable foster-parent. For the two specimens from Bor I am indebted to Mr. G. B. Middleton.

181. Cuculus canorus Linn.

I saw two or three Common Cuckoos at Amien in the Bahr-el-Ghazal on April 10th. They kept uttering the first note only of their familiar call.

182. Chrysococcyx klaasi (Steph.).

a. ♀. Khor Gitti, 31. 1. 07.

b. ♀ juv. ,, ,,

The only examples that I noticed.

183. Indicator sparrmani Stephen.

a. ♂. Pongo River, 5. 2. 07.

b. ♀. ,, ,,

c. ♂. Near Wau, 28. 1. 07.

d. ♀. Pongo River, 6. 2. 07.

This Honey-Guide was a common bird along my route in the Bahr-el-Ghazal Province, except on the open plains towards Meshra-el-Rek.

184. ERYTHROBUCCO ROLLETI (De Filippi).
a. ♂. Chak Chak, 9. 2. 07.
b. ♂. „ 18. 2. 07.
c. ♀. Dud Majok, 28. 3. 07.
d. ♂. Buval, 28. 1. 07.
e. ♂. Chak Chak, 19. 2. 07.
f. ♀. Pongo River, 19. 3. 07.

These handsome and conspicuous Barbets were tolerably common all along our line of march in the Bahr-el-Ghazal after we had entered the forest-region.

185. LYBIUS LEUCOCEPHALUS (De Filippi).
a. ♂. Menyah, 16. 1. 07.
b. ♀. Gardein, 18. 1. 07.
c. ♂ juv. Ayûm, 20. 1. 07.
d. ♂. Gardein, 5. 4. 07.

The White-headed Barbets were fairly common in the open country between Meshra and Wau, feeding on the figs of the "Gameiza" tree. They were also met with at intervals from Wau to Chak Chak, but seemed scarcer in this forest-country. They were usually seen in small parties.

186. LYBIUS ABYSSINICUS (Lath.).
a. ♂. Bor, 4. 5. 06.
b. ♀. „ „

Obtained for me by Mr. G. B. Middleton. I have not met with the bird.

187. LYBIUS VIEILLOTI Leach.
a. ♀. Chak Chak, 12. 2. 07.
b. ♂. Gardein, 18. 1. 07.
c. ♂. Moyen, 21. 1. 07.

Vieillot's Barbet was fairly common throughout the country visited in the Bahr-el-Ghazal Province.

188. Barbatula chrysocoma (Temm.).
a. ♂. Makwak, 22.1.07.
b. ♂. Chak Chak, 9.2.07.
c. ♂. Buval, 28.1.07.

These pretty miniature Barbets were common all along our march in the Bahr-el-Ghazal after the ironstone forest-country was entered. They are noisy little birds for their size, constantly uttering a shrill dissyllabic call-note with the sound of a trilled "r" in it. They seemed fond of the society of mixed parties of other small birds, and were often seen fluttering out from a tree to capture insects in the air.

189. Trachyphonus margaritatus (Rüpp.).
a. ♂. Erkowit, 24.3.06.
b. ♂. " "

At the time of my visit this Barbet was common in the gardens at Suakin, and on Erkowit, where it frequented the Euphorbias. I did not see it at all in the Bahr-el-Ghazal.

190. Trachyphonus arnaudi (Des Murs).
a. ♂. Bor, Upper Nile, 6.5.06.
b. ○ " " 10.5.06.

My two specimens were given to me by Mr. G. B. Middleton. I also noticed the species in a small collection of birds made at Bor by M. de Vilmorin.

191. Iynx torquilla Linn.
a. ♂. Renk, White Nile, 7.1.07.
b. ♂. Chak Chak, 23.2.07.
c. ♂. Khartoum, 11.10.07.

I only met with the Wryneck three or four times on the Bahr-el-Ghazal journey. I saw it at Khartoum on September 26th, 1907, and several times during October.

192. Campothera shoensis (Rüpp.).
a. ♀? Khor Gitti, 29.1.07.

This Woodpecker seemed rare. I saw it three times only —at the Khor Gitti, at Kuanga's, and on the Pongo.

193. Campothera nubica (Gm.).

a. ♀. Chak Chak, 20. 2. 07.

Fairly common between Chak Chak and Wau.

194. Mesopicus pœocephalus (Swains.).

a. ♂. Gardein, 17. 1. 07.

b. ♂. Pongo River, 5. 2. 07.

c. ♀. Chak Chak, 22. 2. 07.

We first met with these little Red-rumped Green Woodpeckers at Gardein, and thence to Chak Chak and Dem Zubeir they were common wherever the forest was of an open nature. They were usually in parties of seven or eight, but pairs were occasionally met with.

195. Iyngipicus obsoletus (Wagl.).

a. ♂. Khor Gitti, 31. 1. 07.

b. ♀. Chak Chak, 15. 2. 07.

I shot a female of this Pigmy Woodpecker on the summit of Erkowit on March 3rd, 1906. It was common all through the country traversed in the Bahr-el-Ghazal Province.

196. Vinago calva (Temm. & Knip).

a. ♂. Mayîk, 15. 1. 07.

b. ♂. „ 9. 4. 06.

These Fruit-Pigeons were abundant between Meshra-el-Rek and Chak Chak, collected in flocks to feed on the fruit of a large *Ficus* locally known as the "Gameiza." They have a clear modulated whistling note, like that of *Osmotreron*.

This is the species mentioned in my previous paper as seen but not shot, and doubtfully listed as *V. waalia* (Gm.) ('Ibis,' 1905, p. 358).

197. Columba guinea Linn.

a. ♀. Gardein, 17. 1. 07.

The Guinea Pigeon was, as usual on the White Nile, first met with among the "Doleib" palms at Tewfikia, and in the Bahr-el-Ghazal country we found it abundant wherever these palms occurred. I occasionally saw sixty or seventy individuals in a flock.

198. Turtur decipiens Finsch & Hartl.

199. Turtur roseigriseus (Sundev.).

a. ♀. Khor Gitti, 24. 3. 07.

Both these Doves were common, the latter especially so, everywhere we went in the Bahr-el-Ghazal Province. The native boys trapped them a good deal with springes.

200. Chalcopelia afra (Linn.).

201. Œna capensis (Linn.).

Both these Doves were met with from Meshra to Chak Chak, but, though common, were much less abundant than the two preceding species.

202. Pœocephalus meyeri (Rüpp.).

a. ♂. Chak Chak, 11. 2. 07.

Meyer's Parrot was common from Ayûm to Chak Chak.

203. Palæornis docilis Vieill.

Also common from Ayûm to Chak Chak.

204. Strix flammea Linn.

I did not see any Barn-Owls in the Bahr-el-Ghazal Province, but I heard their screech frequently at night.

205. Asio capensis Smith.

In January 1907 I again saw numbers of these Owls in the papyrus "sudd" fringing the Bahr-el-Ghazal River. At night the sparks which the steamer was throwing up seemed to excite their curiosity, and several times an Owl swooped right through the golden shower issuing from the funnel.

206. Glaucidium perlatum (Vieill.).

a. ♀? Wau, 23. 1. 07.

The Pearl-spotted Owlet was very common in the Bahr-el-Ghazal forests. We heard it in all directions every evening at dusk.

207. Scops leucotis (Temm.).

a. ♀. Mogatta, R. Atbara, May 1906.

b. ♂. Khartoum (aviary bird, died 10. 12. 06).

I saw several individuals of this handsome Scops Owl at

Mogatta on the Atbara in May 1906. The specimen *b* was caught in Khartoum during the same month, and lived in captivity till October, when it died quite suddenly in beautiful condition. It was a very friendly little Owl, welcoming anyone who noticed it with queer little wheezy whistlings and chuckles.

208. SCOPS GIU (Scop.).

a. ♀. Road to Chak Chak, 10. 2. 07.

The common Scops Owl was plentiful in Khartoum during the winter of 1906, and I noted it constantly in October and November. On the evening of November 3rd I saw three sitting close together on a tree in my garden. The specimen shot in the Bahr-el-Ghazal country was the only one that I saw there.

209. BUBO CINERASCENS Guér.

a. ♂. Chak Chak, 15. 2. 07.

This Owl was common near the rivers in the Bahr-el-Ghazal country.

210. FALCO FELDEGGI Schl.

a. ♂ juv. Khartoum, 4. 11. 07.

One or two individuals can always be seen at Khartoum in the winter.

211. FALCO TANYPTERUS Schl.

a. ♀. Khartoum, 28. 10. 07.

A comparatively rare bird at Khartoum. I saw it a few times in the Bahr-el-Ghazal country.

212. FALCO RUFICOLLIS Swains.

a. ♂. Tewfikia, 10. 1. 07.

b. ♀. Khartoum, 4. 11. 07.

The dashing little Red-headed Merlin was common all along our line of march in the Bahr-el-Ghazal country wherever there were *Borassus* palms. It is curious how fond this bird and *Columba guinea* are of this particular tree. Going up the White Nile, as usual, neither species was met with until we reached *Borassus* palms at Tewfikia, where both are always to be found.

The specimen *b* is the only one that I ever saw at Khartoum.

213. Cerchneis tinnunculus (Linn.).
a. ♀. Khartoum, 26. 10. 07.
b. ♀. „ 28. 10. 07.
c. ♀. „ 30. 10. 07.

The Common Kestrel was abundant along our route in the Bahr-el-Ghazal Province.

Mr. M. J. Nicoll, to whom I sent the specimens, remarks that they are "much paler above and more heavily barred than either British or Giza (Cairo) Kestrels."

214. Cerchneis ardesiacus (Bonn. et Vieill.).
a. ♀. Moyen, 21. 1. 07.

I saw this Grey Kestrel some half a dozen times in all in the Bahr-el-Ghazal Province, meeting with it at Moyen, the Khor Gitti, and Chak Chak. At the latter place Best also obtained a specimen on February 23rd.

215. Elanus cæruleus (Desf.).

The Black-shouldered Kite was fairly common on the open plains between Meshra and Wau, and along the Chell River, but was so shy that it was difficult to get within a hundred yards of it. I remember this as a very confiding and unsuspicious Hawk in Ceylon. Best managed to shoot two specimens at a place called Bîr-el-Girûd (the Well of the Baboons).

216. Milvus ægyptius (Gm.).

The Egyptian Kite was common throughout the parts of the Bahr-el-Ghazal which we visited.

217. Haliaëtus vocifer (Daud.).

The African River-Eagle was common on the Bahr-el-Ghazal, Pongo, and Chell Rivers.

218. Helotarsus ecaudatus (Daud.).
a. ♂. White Nile, 1905.

The beautiful Bateleur Eagle was common in the hills south of Suakin. I noticed that it used to roost in trees in the sheltered ravines. The natives assured me that it killed a great many Klipspringer fawns.

Throughout our march in the Bahr-el-Ghazal Province we saw numbers every day. I have not noticed it so abundant anywhere else. This Eagle has extremely keen sight, and two were accidentally caught in steel traps set for mammals, though the meat bait had been carefully screened over with thorns to conceal it as far as possible from birds passing above.

A nestling in brown plumage, with the cere and orbital skin olive-green, was brought to me from Kordofan on Jan. 1st, 1907, and is growing into a fine bird. I am now rearing a second nestling, brought in on Dec. 24th, 1907.

219. Aquila rapax (Temm.).

The Tawny Eagle was numerous on the Suakin plain and in the mountains of the district, often visiting our camps after a gazelle or an ibex had been shot, and feeding on the scraps in company with *Neophron percnopterus*. It was frequently seen in the part of the Bahr-el-Ghazal country which we visited. On one occasion I came on a pair making a meal off one of the great cane-rats (*Thryonomys swinderenianus*), the skull of which I secured as a specimen. A few days later Blaine saw a pair attack a small Bustard (*Otis lissotis*) and took it from them in a dying condition.

220. Spizaëtus coronatus (Linn.).

A splendid Crested Eagle, probably of this species, was seen on a few occasions on the Pongo River, near Chak Chak, and towards Dem Zubeir. It was usually very wary, and I only succeeded in getting a long rifle-shot at one individual, which I missed.

221. Lophoaëtus occipitalis (Daud.).

The Black-crested Eagle, so common along the White Nile and the lower parts of the Bahr-el-Ghazal River, seemed very scarce in the interior of the Bahr-el-Ghazal Province. I only saw it once on my line of march, at Bîr-el-Girûd.

222. Buteo desertorum (Daud.).

a. ♂. Khartoum, 31.10.07.

Not uncommon at Khartoum in the winter. I did not see it in the Bahr-el-Ghazal Province.

223. Butastur rufipennis (Sundev.).

Fairly common between Meshra and Chak Chak.

224. Asturinula monogrammica (Temm.).

We met with one pair of these Hawks only on our Bahr-el-Ghazal trip, at the Khor Gitti, on March 24th. When I saw them they were circling about high over the forest, and would not descend, so that I had no chance of getting a specimen. Later on in the day, however, Best managed to shoot the female of the same pair. It contained an unbroken egg, ready for exclusion, which he kindly gave to me. The egg is pale blue in colour, without markings, like the egg of a *Melierax,* and measures 41 × 35 mm. The eggs of *Asturinula* have not, I believe, been described before.

The female shot was a very beautiful specimen, and was, for its size, the most compactly built and heaviest small Hawk that I have ever handled.

225. Melierax polyzonus (Rüpp.).

This conspicuous Hawk was common wherever we travelled in the Bahr-el-Ghazal.

226. Melierax gabar (Daud.).

a. ♂. Chak Chak, 25.2.07.

M. gabar was frequently seen during our journey from Wau to Chak Chak.

M. niger (Bonn. et Vieill.), which I believe to be a melanistic variety of this species, I saw only twice—once on March 2nd, between Chak Chak and Dem Zubeir, and again on March 22nd at Kuanga's Village.

227. Astur sphenurus Rüpp.

a. ♂. Wau, 24.1.07.

This Sparrow-Hawk was fairly common throughout the country between Wau and Chak Chak.

228. Circus macrurus (Gm.).

229. Circus æruginosus (Linn.).

Both these Harriers were seen along our route in the Bahr-el-Ghazal Province.

230. Serpentarius secretarius (Scop.).

Since writing my previous notes I have met with the Secretary-Bird perhaps eight or nine times in all, at the following localities: between Gedaref and the Atbara, between Renk and Kaka on the White Nile, and in the Bahr-el-Ghazal Province between Chak Chak and Wau and at Dud Mavok.

A nestling was brought to me from the White Nile in December 1907, and I tried to rear it, but the long slender legs never acquired strength, and gradually became so distorted that I had to destroy the bird.

231. Lophogyps occipitalis (Burch.)?

An immature Vulture, caught at Khartoum in 1906, which I now have alive, appears to me to belong to this species.

232. Gyps rueppelli (Brehm).

Rüppell's Vulture often visited our camps in the Bahr-el-Ghazal country when there was meat about.

233. Pseudogyps africanus (Salvad.).

The African White-backed Vulture was common near Chak Chak, and south towards Dem Zubeir.

234. Neophron percnopterus (Linn.).

Abundant everywhere from Suakin to Kassala, and fairly common throughout the part of the Bahr-el-Ghazal Province which I traversed.

235. Neophron monachus (Temm.).

Much more numerous than the last species.

236. Ibis æthiopica (Lath.).

237. Geronticus hagedash (Lath.).

Both Sacred and Hagedash Ibises were common at all the rivers and "khors" which we visited in the Bahr-el-Ghazal Province.

238. Ardea purpurea Linn.

239. Ardea cinerea Linn.

The same may be said of these Herons as of the Ibises.

240. Ardea melanocephala Vig. & Childr.

241. Ardea goliath Cretzschm.

These two species were only seen on the larger rivers.

242. Herodias brachyrhyncha Brehm.

243. Herodias ralloides (Scop.).

244. Herodias bubulcus (Aud.).

These three Egrets were common in suitable localities, in the Bahr-el-Ghazal Province.

245. Butorides atricapillus (Afzel.).

I saw the African Green Bittern on the Jur, Pongo, and Chell Rivers.

246. Balæniceps rex Gould.

We saw scores of Whale-headed Storks daily on the lower portion of the Bahr-el-Ghazal River.

247. Scopus umbretta Gm.

The Hammerhead was common in the vicinity of water from Meshra to Chak Chak.

248. Ciconia nigra (Linn.).

I came on a party of six Black Storks at a pool in a "khor" between Chak Chak and Dem Zubeir on March 5th. Mr. W. R. G. Bond writes to me that he saw one at Merowe, Dongola Province, on Jan. 18th, 1906.

249. Ciconia abdimii Licht.

I saw a single Abdim Bey's Stork on the Erkowit plateau on March 23rd, 1906.

I noticed this species constantly on the Meshra–Wau–Chak Chak march from January to April.

250. Mycteria senegalensis (Shaw).

Saddle-billed Storks were met with at intervals along the White Nile, on the Bahr-el-Ghazal, and at most of the rivers and "khors" which we crossed between Meshra and Chak

Chak. They were usually seen in pairs or parties of three or four.

On January 9th, 1907, I saw from the steamer a Saddle-billed Stork sitting on a great nest of sticks on the top of a mimosa tree. This was on the E. bank of the White Nile, some miles N. of Tewfikia.

251. LEPTOPTILUS CRUMENIFER (Cuv.).

The African Adjutant was common in the part of the Bahr-el-Ghazal Province visited.

252. ANASTOMUS LAMELLIGERUS Temm.

Common on the Bahr-el-Ghazal rivers. I saw breeding-colonies of the Open-billed Stork and of the Sacred Ibis on trees growing on rocky islets in the Nile just north of the Shabluka Cataract, in Sept. 1907.

253. PELECANUS RUFESCENS Gm.

We passed a fairly large breeding-colony of these Pelicans in a grove of tall "Doleib" palms near Doleiba on January 20th. (The village takes its name from these palms.) If the birds did their fishing in the Jur River they must have had to carry food to their young a distance of forty miles, and I do not know where they could have found a piece of water large enough to supply the colony any nearer.

254. STERNA ANGLICA Mont.

a. ♂. Khartoum, 15. 11. 07.

Abundant at Khartoum in the winter.

255. LARUS RIDIBUNDUS Linn.

a. ♀. Dueim, White Nile, 10. 1. 06.

This immature example of the Black-headed Gull was kindly given to me by M. de Vilmorin. At the time when he wrote the 'Birds of Egypt,' Capt. Shelley knew of no record of its existence in Nubia. I saw a similar specimen at Dueim on Jan. 4th, 1907, but this Gull is certainly rare on the White Nile.

256. PLECTROPTERUS RUEPPELLI Sclat.

After leaving Meshra-el-Rek I only saw the Spur-winged Goose at Amien.

257. SARCIDIORNIS MELANONOTA (Penn.).

The Comb-Goose was common at several points between Meshra and Chak Chak.

258. DENDROCYCNA VIDUATA (Linn.).

I saw the White-faced Whistling-Teal at a few "khors" between Meshra and Chak Chak, but it was scarce inland in the dry season.

259. CHENALOPEX ÆGYPTIACUS (Linn.).

I saw the Egyptian Goose on the Jur and Chell Rivers, but only in small numbers. The lower portion of the White Nile is the great stronghold of the bird in the Soudan.

260. QUERQUEDULA CIRCIA (Linn.).

a. ♂. Khartoum, 10. 3. 06.

I shot several drakes of the Garganey in breeding-plumage about this date, flying northwards at dusk.

261. FULIGULA NYROCA (Güldenst.).

a. ♂. Khartoum, 10. 3. 06.

Shot and given to me by Sir John Eardley Wilmot.

262. FULIGULA CRISTATA (Leach).

Sir John Eardley Wilmot, flight-shooting with me in the evening, killed three Tufted Ducks at Khartoum on March 10th, 1906.

263. FULICA ATRA Linn.

A Coot, caught in Khartoum, was brought to me alive on November 28th, 1907. This is, I think, only the second that I have seen here.

264. GALLINULA CHLOROPUS (Linn.).

Two or three exhausted Waterhens were caught in the gardens at Khartoum in October 1905, one on October 17th, 1906, and one or two in October 1907.

265. PORZANA MARUETTA Linn.

a. ♀. Khartoum, 8. 10. 07.

I have notes of weak and exhausted specimens of the Spotted Crake captured in Khartoum on October 7th, 8th, and 10th, 1906, April 25th, 1907, and many in October 1907.

266. TURNIX LEPURANA (Smith.).

I flushed an unmistakable *Turnix*, presumably of this species, at Dud Mavok on March 31st, 1907. I am now inclined to think that the note in my previous paper ('Ibis,' 1905, p. 386) under the head of this species should refer to *Coturnix delegorguei* Deleg.

267. COTURNIX DELEGORGUEI Deleg.

a. ♂. Amien, 10. 4. 07.
b. ♂. „ „

I shot a female of the Harlequin Quail at Mayîk on April 9th, and on the morning of the 10th I flushed several birds, and shot two males, just before reaching Amien. This was on my return journey from Wau to Meshra. Some rain had lately fallen and the young grass was springing up. When I passed over the same ground in January the country was very much dried up, and I did not see one of these pretty Quails. I am inclined to regard those that I saw in April as new arrivals.

268. AMMOPERDIX CHOLMLEYI.

a. ♂. Hills S. of Suakin, April 1906.
b. ♂. „ „ „
c. ♀. „ „ „
d. ♀. „ „ „

These pretty little Rock-Partridges were fairly common in the ravines of the hills south of Suakin. They were usually met with near water, and were generally in pairs, threes, or fours. The males mount on the top of some large boulder of rock and utter a call-note like the sharp clinking of two stones. They are very active birds, making their way rapidly up a precipitous hill-side with quick springs from rock to rock.

269. FRANCOLINUS GEDGII Grant.

a. ♂. Ayûm, 21. 1. 07.
b. ♂. Gardein, 8. 4. 07.

This red-legged Francolin was common on the open country between Meshra and the commencement of the ironstone forest-country at Ayûm. After crossing the Jur River we found it entirely replaced by the yellow-legged *F. icterorhynchus.*

270. Francolinus icterorhynchus Heugl.

a. ♂. Chak Chak, 18. 2. 07.
b. ♀ jr. Pongo River, 4. 2. 07.

This was the only Francolin which we saw on the ironstone country between Wau and Chak Chak. It is a better flier than the red-legged bird. It was common, and generally in coveys.

My specimens appear to differ slightly from those in the British Museum, in being rather more sparsely spotted beneath, and in lacking a small blackish patch below the eye, which was present in those that I examined.

271. Francolinus erckeli (Rüpp.).

a. ♂. Erkowit, 22. 3. 06.
b. ♂. ,, ,,
c. ♀. ,, ,,
d. ♀. ,, 25. 3. 06.

These splendid Francolins were common on Erkowit and were heard all the way up the Kolkilai Pass. They were generally in pairs or in small parties of four or five. In the early morning and evening they were very noisy, repeatedly uttering a loud harsh call, and were then easily approached if stalked quietly. They were not very shy, and preferred walking away to flying, until shot at. On the ground they somehow reminded me of the Ruffed Grouse of North America.

272. Ptilopachys fuscus (Vieill.).

a. ♂. Chak Chak, 19. 3. 07.
b. ♂. Buval, 29. 1. 07.

These Stone-fowl were common in the forests of the ironstone country from Wau to Chak Chak, and between that station and Dem Zubeir. They were generally met with in parties or in pairs with broods of half-grown young. In the evening they become very noisy, uttering shrill whistling calls. When flushed by a dog they often fly up into trees.

273. Numida ptilorhyncha Licht.

This Guinea-fowl was abundant everywhere along our route in the Bahr-el-Ghazal Province.

274. Pterocles quadricinctus Temm.

This Sand-Grouse was common in the vicinity of water from Meshra to Chak Chak and Dem Zubeir, coming to drink, as usual, just at or after sunset.

I took a clutch of three fresh eggs at the Pongo River on Feb. 7th.

275. Lissotis lovati Grant.

Lord Lovat's Bustard was seen at intervals between Meshra and Chak Chak, and south towards Dem Zubeir, but was comparatively scarce.

At the Khor Kobshum, Blaine took one from two Tawny Eagles which were killing it, and I shot a male near Meshra in March.

276. Otis denhami Childr.

I saw this splendid Bustard several times between Moyen and Chak Chak, but failed to shoot a specimen. The birds appeared to keep very closely to the same bit of ground, and on my return journey I generally saw them in almost the identical spots where I had marked them down two months before. They were, as a rule, extremely wary and hard to approach, but on one occasion I got within forty yards of a grand old male "displaying" in front of two females—of course, when I had no rifle with me!

277. Eupodotis arabs (Linn.).

I saw this Bustard on the Bahr-el-Ghazal River, but after the ironstone country was entered *Otis denhami* was the only large Bustard seen.

278. Balearica ceciliæ Mitchell.

Crowned Cranes were met with, in comparatively small numbers, on the Jur, Pongo, and Chell Rivers.

I saw no Grey Cranes inland in the Bahr-el-Ghazal Province.

279. Phyllopezus africanus (Gm.).

I did not myself see this Jacana, which is very abundant on the White Nile and Bahr-el-Ghazal, on the smaller rivers inland.

280. Lobivanellus senegalus (Linn.).

a. ♂. Dervish Dem, Upper Nile, Jan. 1906.

The Yellow-wattled Lapwing was met with from Mesnra to Chak Chak and thence towards Dem Zubeir. I took a clutch of four eggs at the Khor Kobshum on March 6th. They were deposited on a patch of dried mud surrounded by high grass; a few small bits of earth were packed round the eggs. The specimen from Dervish Dem was kindly given to me by M. de Vilmorin.

281. Sarciophorus tectus (Bodd.).

I frequently saw the Red-wattled Lapwing along our route in the Bahr-el-Ghazal Province.

282. Hoplopterus spinosus (Linn.).

I saw Spur-winged Plovers on the Jur, Pongo, and Chell Rivers.

283. Defilippia crassirostris (de Filippi).

a. Sex? Bor, Feb. 1906.

I am indebted to M. de Vilmorin for my only specimen; it was procured by him on the Upper Nile.

284. Charadrius fulvus.

A Golden Plover with grey axillaries was shown to me alive in Khartoum on Oct. 12th, 1905.

285. Charadrius asiaticus Pall.

a. ♂. Near Ayûm, 20.1.07.
b. ♀. Khartoum, 11.11.07.
c. ♂. ,, 7.11.07.

The specimen *a* was in nearly full breeding-plumage. It was shot from a large flock of two or three hundred birds which were on an open cotton-soil plain. They all appeared to be in the same state of plumage. This was the only time that I met with the species in the Bahr-el-Ghazal Province.

286. Ægialitis cantiana (Lath.).

a. ♂. Khartoum, 4.11.07.
b. ♂. „ 12.11.07.
c. ♀. „ 13.11.07.

Abundant in the winter between Khartoum and the White Nile. Perhaps these African Kentish Plovers should stand as *Æ. alexandrinus* (Linn.).

287. Pavoncella pugnax (Linn.).

I saw some large flights of Ruffs on the open plain at Amien on April 19th.

288. Totanus stagnatilis Bechst.

a. ♀. Khartoum, 11.11.07.

289. Totanus ochropus (Linn.).

I flushed the Green Sandpiper occasionally at pools and "khors" at various points along our route in the Bahr-el-Ghazal Province.

290. Tringoides hypoleucus (Linn.).

The same remarks apply to the Common Sandpiper.

291. Gallinago cœlestis (Frenz.).

a. ♂. Khartoum, 12.11.07.
b. ♀. „ 20.11.07.
c. ♀. „ „

We saw a few Snipe at various ponds and "khors" between Meshra and Chak Chak from January to the middle of March.

292. Gallinago gallinula (Linn.).

a. Sex? Kawa, White Nile, 27.11.05.

Shot, and kindly given to me, by Captain Dauford, R.E. The only Soudan specimen that I have seen.

293. Œdicnemus senegalensis Swains.

a. ♀. Chak Chak, 24.3.07.

This Thick-knee was common along the Jur, Pongo, and Chell Rivers.

294. Œdicnemus affinis Rüpp.

a. ♀. Lake No, 12.1.06.

The specimen from Lake No was kindly given to me by

M. de Vilmorin. The bird is very like the South-African *Œ. capensis,* but has a much shorter tarsus.

295. Pluvianus ægyptius (Linn.).

a. ♀. Chak Chak, 19. 2. 07.

The Egyptian Plover was abundant on the sandbanks of the Jur, Pongo, and Chell Rivers.

296. Rhinoptilus chalcopterus (Temm.).

a. ♀.	Between Chak Chak and the Pongo,	19. 3. 07.
b. ♀.	,, ,, ,, ,,	20. 3. 07.

I only met with these pretty Plovers at one point on our Bahr-el-Ghazal journey. On February 9th I flushed three pairs of them close together. This was in the high forest, with the ground fairly open beneath the trees. They lay till almost trodden on, and then flitted up suddenly and gave a difficult twisting snap-shot among the trees. Being anxious not to damage them as specimens, I missed the birds I fired at on this occasion through giving them too much law. I did not see the species again until we camped at the same spot on our return journey. It was late in the evening, but I hurried off to the spot where I had seen them before, and soon flushed one, which I shot. It was a female, and contained an egg of full size, but with the shell not properly formed.

Early next morning as we were leaving the place I got another bird at exactly the same spot. I imagined that this would be the male, but it proved to be a second female, not breeding.

These Plovers seemed to me to be quite forest-birds. I imagine that their habits must be crepuscular, as they lie like Nightjars during the daytime.

297. Glareola pratincola (Linn.).

a. ♂.	Khartoum,	1. 11. 07.
b. ♂.	,,	15. 11. 07.

I did not see the Pratincole in the Bahr-el-Ghazal Province.

298. Struthio camelus Linn.

I saw a pair of Ostriches near Mayîk on April 9th, but most of the country through which I passed in the Bahr-el-Ghazal Province was too heavily forested for them.

X.—*On a Collection of Birds made by Mr. Douglas Carruthers during his Journey from Uganda to the Mouth of the Congo.*

By W. R. Ogilvie-Grant.

(Plates V. & VI.)

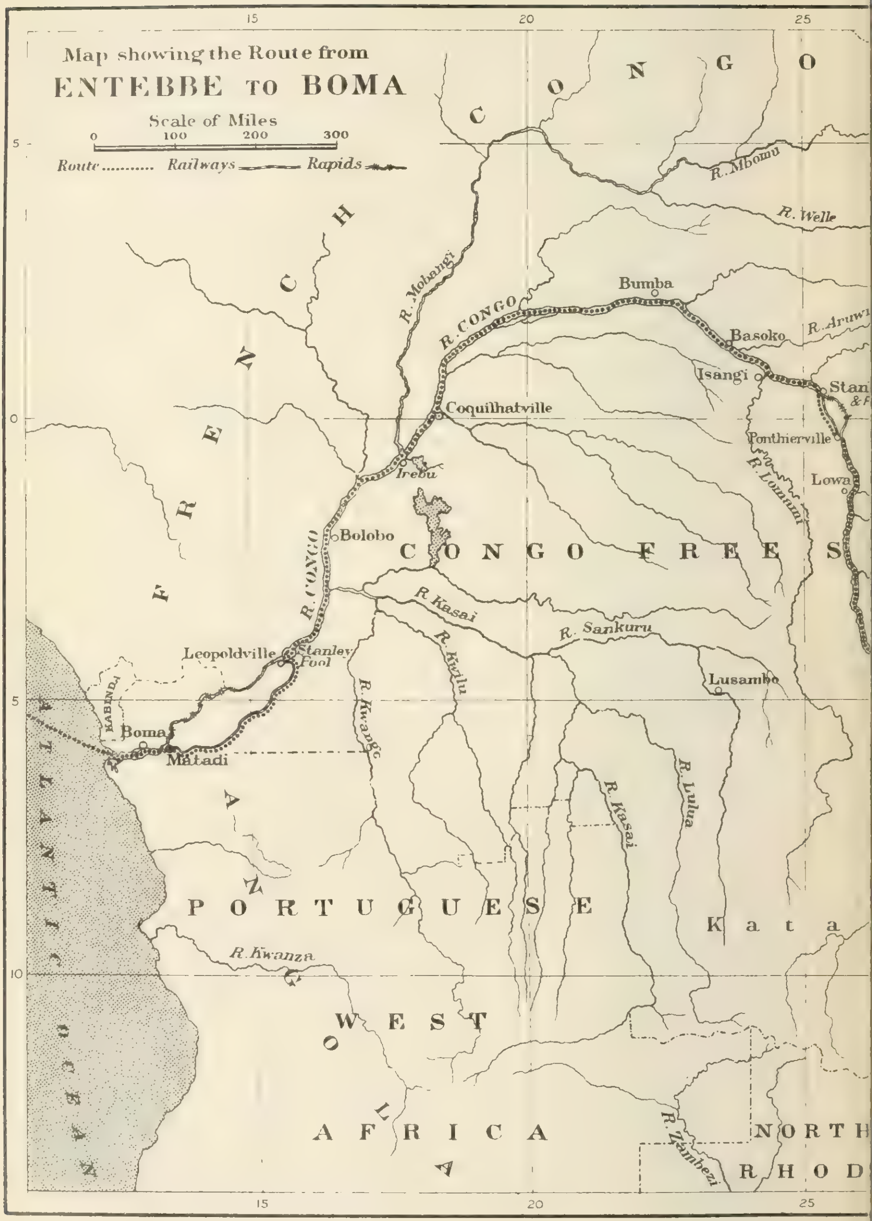
The collection of birds formed by Mr. Douglas Carruthers during his journey from Entebbe to the Mfumbiro Volcanoes, Lakes Kivu and Tanganyika, and the upper waters of the Congo, though comparatively small as regards the actual number of specimens, includes examples of no less than 133 species. Quite a number of these are of great interest, six—viz., *Cinnyris tanganyicæ, C. marginatus, Anthothreptes carruthersi, Crateropus carruthersi, Muscicapa brevicauda*, and *Barbatula mfumbiri*—representing hitherto unknown forms; while many, such as *Brachycope anomala, Spermospiza griseogenys*, and *Laniarius dohertyi*, are very rare birds and interesting on account of the locality, which extends our knowledge of their geographical range. Several of the highland species met with on the Mfumbiro Volcanoes prove to be identical with species already described from similar altitudes on Ruwenzori and the Mau Escarpment, and it is greatly to be regretted that ill-health prevented Mr. Carruthers from making a complete collection on this interesting mountain-chain, which is now being more thoroughly explored by Mr. Rudolf Grauer.

To save repetition, the titles of the principal works quoted in this paper have been abbreviated as follows :—

Captain Shelley's 'Birds of Africa' (1896–1906, incomplete) is referred to as "Shelley."

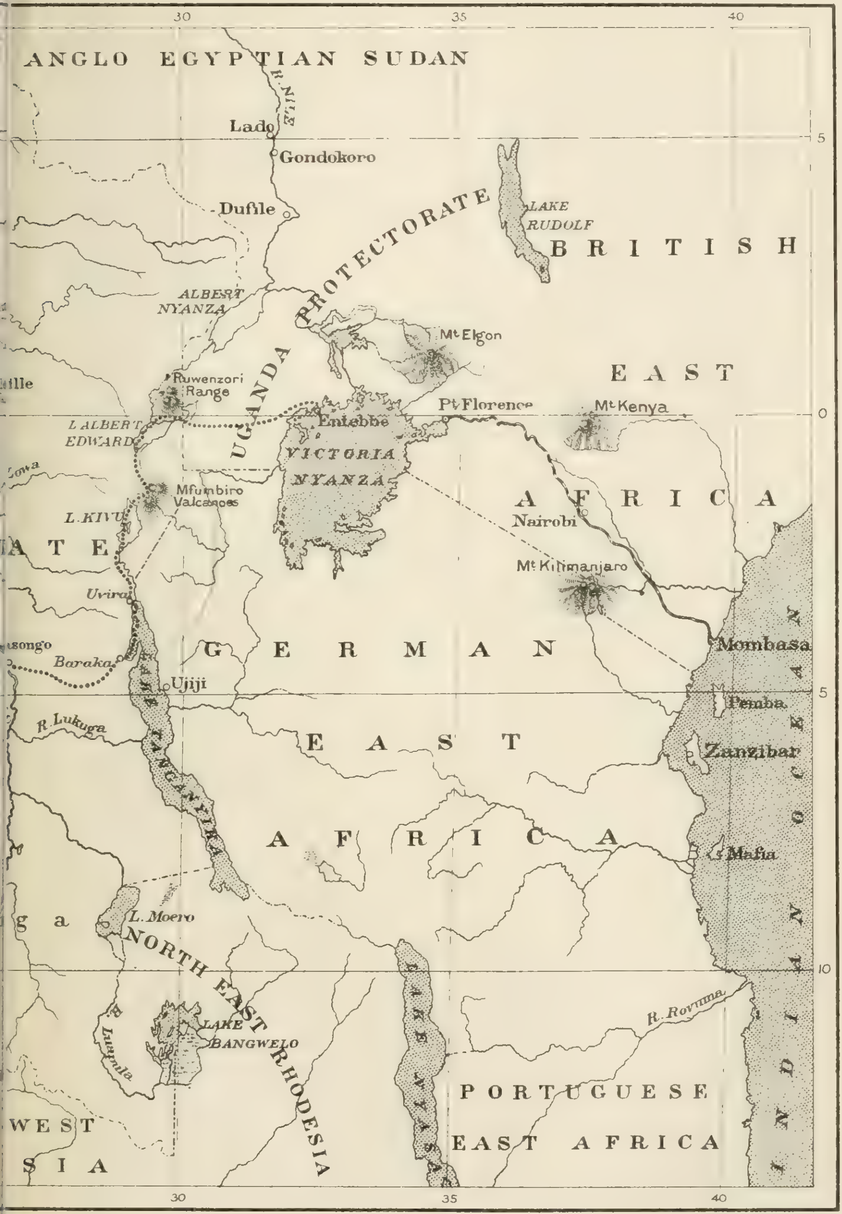
Dr. Reichenow's 'Die Vögel Afrikas' (1900–1905) is quoted as "Reich."

The following itinerary of the Expedition has kindly been furnished by Mr. A. F. R. Wollaston, who accompanied Mr. Carruthers during his journey from Uganda to the West Coast of Africa (see map, Plate VI.) :—



Map showing the Route from
ENTEBBE TO BOMA

Scale of Miles
0
100
200
300
Route ....
Railways
Rapids
15
20
25
5
0
5
10
FRENCH CONGO
CONGO FREE S
PORTUGUESE WEST AFRICA
ANGOLA
ATLANTIC OCEAN
NORTH RHOD
Kata
KABINDA
R. Mbomu
R. Welle
R. Mobangi
R. CONGO
R. Aruwi
Bumba
Basoko
Isangi
Stan
& F
Ponthierville
R. Lomami
Lowa
Coquilhatville
Irebu
Bolobo
R. Kasai
R. Sankuru
R. Kwilu
R. Kwango
Leopoldville
Stanley Pool
Lusambo
Boma
Matadi
R. Kasai
R. Lulua
R. Kwanza
R. Zambezi


30
35
40
ANGLO EGYPTIAN SUDAN
R. NILE
Lado
Gondokoro
Dufile
5
PROTECTORATE
LAKE RUDOLF
BRITISH
ALBERT NYANZA
Mt Elgon
EAST
ille
Ruwenzori Range
UGANDA
Pt Florence
Mt Kenya
0
L. ALBERT EDWARD
Entebbe
VICTORIA NYANZA
Mfumbiro Valcanoes
AFRICA
L. KIVU
Nairobi
ATE
Mt Kilimanjaro
Uvira
songo
Baraka
GERMAN
Mombasa
Ujiji
5
Pemba
R. Lukuga
TANGANYIKA
EAST
Zanzibar
AFRICA
Mafia
INDIAN OCEAN
g a
L. Moero
NORTH EAST RHODESIA
10
R. Luapula
LAKE BANGWELO
LAKE NYASA
R. Rovuma
PORTUGUESE EAST AFRICA
WEST
SIA
30
35
40

Leonardson & Co.

Sept. 17, 1906.—Left Entebbe.
Oct. 1.—Mbarara (Ankole).
Oct. 12–22.—Lake Albert Edward (north end).
Oct. 25–29.— „ „ (south end).
Nov. 1–25.—Mfumbiro Volcanoes.
Nov. 25 to Dec. 13.—Lake Kivu.
Dec. 13–21.—Between Lakes Kivu and Tanganyika.
Dec. 21–31.—Tanganyika (Uvira, north end, to Baraka, Burton Gulf).
Jan. 1–30, 1907.—Baraka (Tanganyika) to Kasongo (Congo).
[Kalembe-lembe (5th), Niembo (9th), Kabambare (13th to 19th).]
Jan. 30 to Feb. 1.—Kasongo.
Feb. 4–12.—Kamimbe (or Sendwe).
Feb. 13.—Lokandu.
Feb. 15–22.—Ponthierville.
Feb. 23–29.—Stanleyville. No birds were collected between this place and Boma at the mouth of the Congo, which was reached on the 17th of March, 1907.

Introduction. By Douglas Carruthers.

After the termination of the Ruwenzori Expedition I determined, in company with Mr. A. F. R. Wollaston, to cross Africa from Uganda to the West Coast in order to make a collection of birds.

Our route took us through little-known districts, large areas of which had never been collected over before; but owing to fever and sickness I was unable to make so large and complete a collection of birds as I had intended, and had to leave almost untouched the most interesting region of all—namely, the Mfumbiro Volcanoes.

Leaving Entebbe on the 17th of September, 1906, we travelled through Southern Uganda to Lake Albert Edward, obtaining, however, but few birds that had not already been procured by the Ruwenzori Expedition. At the south end of Lake Albert Edward, which is really a vast marsh, I saw extraordinary numbers of water-birds, such as Pelicans, Darters, Geese, Gulls, Terns, Stilts, and numerous other Waders, as well as Kingfishers.

Here, at the threshold of the volcano-region, I was taken ill with fever, which prostrated me for a month; and when I was well enough to travel there was only time to make a small collection of the birds of this district. The few species procured were, however, interesting, as shewing the likeness between the highland fauna of Mfumbiro and that of Ruwenzori. The country surrounding the volcanoes is covered with long grass, while the volcanoes themselves are forested on the lower slopes with vegetation very similar to that of Ruwenzori at 8000 ft. This gradually merges into a bamboo-forest of large area, and above it there is a moss- and lobelia-region similar to that met with on the higher parts of Ruwenzori. There is also a good deal of bare rock, and on the highest volcano, Karissimbi, often a little snow at about 13,000 ft. Of the eight volcanoes only one is active.

At 7000 ft. I procured the following birds:—The Yellow-shouldered Weaver-Finch (*Pyromelana xanthomelas*), the Grey-headed Waxbill (*Neisna nyansæ*), Sharpe's Crimson-wing (*Cryptospiza ocularis*), Grauer's Seed-eater (*Serinus graueri*), the Black-headed Babbler (*Turdinus atriceps*), Doherty's Bush-Shrike (*Laniarius dohertyi*), and the Ruwenzori Bush-Robin (*Tarsiger ruwenzorii*). Had I been able to explore the higher slopes, many more of the species met with on Ruwenzori would, no doubt, have been found. It would be difficult ground to work, for the country is entirely unknown, and to enable one to travel about on the volcanoes it would be necessary to cut paths.

After reaching Lake Kivu, a small but exceedingly beautiful lake surrounded by steep hills and dotted with innumerable islands, we passed down the western side in canoes, visiting the island called "Kidjwe." This is well forested, but all the other islands as well as the hilly shores are covered with short grass.

Journeying through very hilly country almost devoid of bird-life, and passing down the Russisi Valley, we reached Lake Tanganyika. Here I saw many birds not met with further to the north.

West of Lake Tanganyika, and between that lake and the Congo, parts of the country are hilly, covered with grass and acacia, and interspersed with wide plains, overgrown with long grass. Here I procured specimens of four interesting new species (*Cinnyris marginatus, C. tanganyicæ, Anthothreptes carruthersi,* and *Crateropus carruthersi*), but was again taken ill with fever, and had to be carried for a fortnight until the Congo River was reached at Kasongo, 2000 miles from its mouth. At that place the river is about 800 yards broad and flows through open grass-land.

Five days' journey down the river brought us to the southern edge of the Congo forest, which continues on either bank without a break for 1500 miles. We followed the river down to its mouth and collected at different places on the way.

At Ponthierville I was able to procure a number of birds in a comparatively short time, owing to the presence of rubber-plantations, in which the undergrowth in the forest had been cleared away and the forest-trees only remained. The impenetrable nature of the undergrowth is the chief difficulty one has to contend with in making a collection of birds in the Congo forest.

We found the Congo River itself remarkably poor as regards its bird-life. There were few sandbanks, and no marshes or feeding-grounds, and during the whole journey I saw only one Duck. The heavy forest hung over the water's edge on either bank, and every island was clothed with rank vegetation. Flocks of Parrots and a few Hornbills were observed crossing over the forest, while Kingfishers, Herons, and Sandpipers were occasionally seen, but little else. The forest itself is full of bird-life, and no doubt much still remains to be done there.

By way of Stanleyville, Leopoldville, Matadi, and Boma we reached the West Coast on the 17th of March, 1907.

DILOPHUS CARUNCULATUS (Gmel.).

Perissornis carunculata Reich. ii. p. 670 (1903).

No. 5003. *a.* ♂. West coast of Lake Victoria, 4000 ft., 25th Sept.

Iris brown; bare skin round the eyes yellow; bill whitish; bare skin on the throat black; feet brown.

[The Wattled Starling is found in large flocks.—D. C.]

Dicrurus coracinus Verr.

Dicrurus coracinus Reich. ii. p. 650 (1903).

No. 5242. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Iris red; bill and feet black.

Oriolus nigripennis Verr.

Oriolus nigripennis Reich. ii. p. 661 (1903).

No. 5207. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 18th Feb.

Iris dark red; bill pink; feet dark grey.

Pyromelana sundevalli (Bonap.).

Pyromelana nigrifrons Reich. iii. p. 122 (1904).

Pyromelana sundevalli Shelley, iv. p. 98 (1905).

Nos. 5088, 5098. *a, b.* ♀. North of Lake Tanganyika, 3000 ft., 18th & 20th Dec.

No. 5165. *c.* ♂. East of Kasongo, Upper Congo, 2000 ft., 28th Jan.

Iris dark brown; bill and feet brown.

All three examples of the Red Bishop-Bird are in worn change-plumage, the male especially being very ragged.

♂. Wing ...... 2·7 in.
♀. ,, ... 2·4 ,,
♀. ,, ... 2·4 ,,

Pyromelana xanthomelas (Rüpp.).

Euplectes xanthomelas Reich. iii. p. 128 (1904); Shelley, iv. p. 76 (1905).

No. 5044. *a.* ♂. Mfumbiro Volcanoes, 7000 ft., 23rd Nov.

Nos. 5060, 5061, 5068, 5077. *b–e.* ♂ ♀. Lake Kivu, 4900 ft., 1st–14th Dec.

No. 5104. *f.* ♂. North-west of Lake Tanganyika, 2800 ft., 28th Dec.

Iris dark brown; bill black, lower mandible whitish; feet dark brown.

Two males of the Yellow-shouldered Weaver-Finch (Nos. 5044, 5077) have nearly attained their full breeding-plumage, while the other males, also killed in December, are in change-plumage, though one has a small patch of new black feathers on the left side of the forehead.

PYROMELANA FLAMMICEPS (Swains.).

Pyromelana flammiceps Reich. iii. p. 118 (1904); Shelley, iv. p. 104 (1905).

Nos. 5091, 5092. *a, b.* ♂. North of Lake Tanganyika, 3000 ft., 18th–19th Dec.

Nos. 5102, 5103. *c, d.* ♂. North-west of Lake Tanganyika, 2800 ft., 28th Dec.

Nos. 5162, 5164. *e, f.* ♂ ♀. East of Kasongo, Upper Congo, 2000 ft., 23rd & 28th Jan.

Iris dark brown; bill black; feet brown.

One male (No. 5164) of the Fire-crowned Bishop-Bird has partially assumed the breeding-plumage; the remainder of the specimens are in change-plumage.

PENTHETRIA MACRURA (Gmel.).

Coliuspasser macroura Reich. iii. p. 138 (1904); Shelley, iv. p. 49 (1905).

Nos. 5148, 5149, 5152, 5157. *a–d.* ♂. North-west of Lake Tanganyika, 2300–2500 ft., 8th–9th Jan.

No. 5160. *e.* ♂ imm. East of Kasongo, Upper Congo, 2000 ft., 20th Jan.

Iris dark brown; upper mandible black, lower mandible pale grey.

Three male examples of the Yellow-mantled Whydah are in full breeding-dress; the fourth (No. 5149), procured on the 8th of January, has only partially assumed this plumage.

The immature example in somewhat worn plumage resembles the female.

UROBRACHYA PHŒNICEA (Heugl.).

Urobrachya phœnicea Reich. iii. p. 130 (1904); Shelley, iv. p. 65 (1905).

Nos. 5022, 5038. *a, b.* ♂ et ♂ imm. Mfumbiro Volcanoes, 5000 ft., 16th & 20th Nov.

Iris dark hazel; bill light grey; feet black.

Cryptospiza ocularis Sharpe.

Cryptospiza ocularis Sharpe, Bull. B. O. C. xiii. p. 8 (1903).

Cryptospiza reichenowi Alexander, Ibis, 1903, p. 351 [part.]; Reich. iii. p. 174 (1904) [part.]; Shelley, iv. p. 278 (1905) [part.].

No. 5047. *a.* ♂. Mfumbiro Volcanoes, 7000 ft., 24th Nov.

Iris dark hazel; bill black; feet brown.

As already briefly noted [*cf.* Bull. B. O. C. xix. p. 42 (1907)], Sharpe's Crimson-wing (*C. ocularis*) appears to be a distinct species from *C. reichenowi* (Hartl.). The male procured on the Mfumbiro Volcanoes is in every way similar to a series of males collected on Ruwenzori and to the type specimen of *C. ocularis* from the same locality—not from Mount Elgon, as stated by Mr. Boyd Alexander (*vide suprà*). Females from Ruwenzori differ from the description and figure of the female types of *C. reichenowi* from Camaroon in having the feathers on the lores and *the area surrounding the eye* pale olive-buff (in the male they are crimson). In *C. reichenowi* only the patch in front of the eye is pale fulvous.

Quelea cardinalis (Hartl.).

Quelia cardinalis Reich. iii. p. 112 (1904); Shelley, iv. p. 119 (1905).

No. 5093. *a.* ♂ imm. North of Lake Tanganyika, 3000 ft., 19th Dec.

Iris dark brown; bill and feet brown.

A male of the Cardinal Dioch is evidently an immature specimen, its plumage being similar to that of the female. There is, however, a trace of orange-red along the superciliary stripe and below the eye, which seems to indicate the first step towards attaining the scarlet head of the adult male.

Quelea erythrops (Hartl.).

Quelea erythrops Reich. iii. p. 111 (1904); Shelley, iv. p. 117 (1905).

No. 5139. *a.* ♂. East of Kasongo, Upper Congo, 3000 ft., 7th Jan.

Iris and bill dark brown; feet brown.

This specimen is of considerable interest, and though I have provisionally referred it to the present species, it may, when more material is available, eventually prove to be distinct. It differs from other adult male examples of the Red-headed Dioch in the British Museum in having the head dark maroon-red instead of dark scarlet-red. I have compared it with the description and figure of *Foudia hæmatocephala* Heuglin, but this appears to be a true synonym of *Q. erythrops*.

SPERMESTES POENSIS (Fras.).

Spermestes poensis Reich. iii. p. 152 (1904); Shelley, iv. p. 164 (1905).

Nos. 5211, 5212. *a, b.* ♂ ♀. Ponthierville, Upper Congo, 2000 ft., 18th Feb.

Iris dark hazel; bill grey; feet black.

A pair of the Southern Black-and-White Mannikin are perfectly similar to one another in plumage.

LAGONOSTICTA RUBERRIMA.

Lagonosticta brunneiceps ruberrima Reich. iii. p. 198 (1904).

Lagonosticta brunneiceps Shelley, iv. p. 258 (1905) [part.].

No. 5011. *a.* ♀. S.W. Uganda, 4000 ft., 29th Sept.

No. 5017. *b.* ♂. North of Lake Albert Edward, 3000 ft., 12th Oct.

Nos. 5089, 5090. *c, d.* ♂ ♀. North of Lake Tanganyika, 3000 ft., 18th Dec.

Iris dark red; eyelids yellow; bill black and pink; feet brown.

The specimens collected by Mr. Carruthers, as well as a series from South-east Ruwenzori, all belong to the darker Equatorial form of the Brown-capped Fire-Finch, which appears to be a fairly well-marked subspecies, though Captain Shelley does not recognise it as such.

LAGONOSTICTA RHODOPARIA Heugl.

Lagonosticta rhodopareia Reich. iii. p. 200 (1904); Shelley, iv. p. 250, pl. xxxiv. fig. 1 (1905).

Lagonosticta ugandæ Salvad. Boll. Mus. Torino, xxi. no. 542, p. 2 (1906).

Lagonosticta rubricata hildebrandti, p. 167, & *L. r. hæmatocephala*, p. 168, Neumann, Orn. Monatsb. xv. (1907).

Nos. 5027, 5028, 5053. *a–c.* ♂. Mfumbiro Volcanoes, 5000 ft., 17th Nov.

Nos. 5057, 5062, 5063, 5064, 5065, 5069, 5071, 5072. *d–l.* ♂ ♀. Lake Kivu, 4900 ft., 30th Nov. to 4th Dec.

Iris dark hazel; bill black, base of lower mandible bluish grey; feet very dark grey.

The fine series of this Fire-Finch in the present collection, together with the series in the British Museum and three specimens procured by the Ruwenzori Expedition, have greatly assisted me in investigating the conclusions arrived at by Prof. Oscar Neumann [*cf.* Orn. Monatsb. xv. pp. 167–168 (1907)]. He states that he has examined the type of *L. rhodoparia* Heugl., which was obtained at Keren, in Bogosland, at an elevation of from 4000 to 5000 ft., and that, in his opinion, it is perfectly distinct from the allied forms found in East Africa and in Nyasaland which have hitherto been included under that name by Dr. Sharpe and other African ornithologists.

L. rhodoparia Heugl. from Bogosland is said to differ from the East-African birds in having the top of the head brownish-grey without any wash of red; but an adult male and female from the Gessima River, Likipia, B. E. Africa, collected in January and in somewhat worn plumage, seem to agree very closely with Heuglin's description, and have the top of the head brown, with scarcely a trace of red edges to the feathers, while the bright crimson feathers at the base of the bill and above the eyes form a marked contrast to the crown.

Prof. Neumann has named the East-African bird *L. rubricata hildebrandti*, and his type specimen being a male from Ukamba, B. E. Africa, should belong to the same form as the birds from the Gessima River; but, as already stated, the latter apparently resemble the typical example of *L. rhodoparia* from Bogosland!

Twelve adult males from Nairobi, Nandi, Kakamega, Entebbe, Toro, Ruwenzori, Lake Kivu, and the Mfumbiro Volcanoes, shot between the months of April and January and all in more or less fresh plumage, are typical examples of Prof. Neumann's *L. hildebrandti* (= *L. ugandæ* Salvad.), having the crown and nape olive-grey washed with rose-red *.

Birds from Dar-es-Salaam, Mozambique, and Nyasaland have been named *L. rubricata hæmatocephala* by Prof. Neumann, and certainly, as a whole, have the red wash on the crown and nape rather more marked than is the case with birds found further north; but some individuals from Nyasaland are inseparable from British East-African specimens. I therefore agree with Captain Shelley in regarding them all as one species under the name of *L. rhodoparia* Heugl.

[Since the above was written I have been able to examine the type specimen of *L. rhodoparia* Heugl., and find that it closely resembles the birds from the Gessima River mentioned above. The differences in the colour of the upper parts are probably seasonal, the birds being greyer when freshly moulted and growing browner as the feathers become faded and worn.]

L. congica Sharpe, founded on what is probably a somewhat immature female example, is *very* closely allied to *L. rhodoparia*, but the head and mantle are greyer, and the former has scarcely a trace of the pinkish wash which is characteristic of all the female specimens of *L. rhodoparia* in the British Museum, while the crimson of the rump and upper tail-coverts is even brighter.

Specimens in the Tring Museum from Ussure have been identified by Prof. Neumann as *L. congica*, but they are, in my opinion, referable to *L. rhodoparia*, and do not possess the greyer crown and upper parts characteristic of the type from Kasongo. I am, however, by no means sure that

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* *Cf.* Neumann, Bull. B. O. C. xxi. p. 59 (1908).

L. congica is really separable from *L. rhodoparia,* the greyer crown and mantle being very possibly merely signs of immaturity.

To settle this question it would be necessary to examine adult birds from Kasongo; but though Mr. Carruthers procured a number of specimens at Mfumbiro and Lake Kivu, he does not appear to have met with the species on the Congo.

The true *L. rubricata* from South Africa may always be distinguished from all the above-mentioned dark-billed forms by having the base of the lower mandible of a *whitish* horn-colour.

PYTELIA BELLI Grant.

Pytelia belli Grant, Bull. B. O. C. xxi. p. 14 (1907).

No. 5120. *a.* ♂. North-west of Lake Tanganyika, 3000 ft., 2nd Jan.

Iris orange; bill red; feet pale brown.

This bird agrees perfectly with the male type of *P. belli* from S.E. Ruwenzori, having the grey on the cheek extending beneath the eye to the lores and the red on the chin and throat continued over the greater part of the chest, of which only the base is yellow.

NEISNA NYANSÆ.

Neisna dufresneyi nyansæ Neumann, J. f. O. 1905, p. 350.

Neisna minima Grant, Bull. B. O. C. xvi. p. 117 (1906).

No. 5046. *a.* ♂. Mfumbiro Volcanoes, 7000 ft., 24th Nov.

No. 5070. *b.* ♀. Lake Kivu, 4900 ft., 2nd Dec.

Iris dark red; upper mandible black, lower mandible red; feet black.

In describing this form from a series of specimens collected on Ruwenzori at an elevation of 6000 ft., I overlooked the fact that it had already been characterized by Prof. Neumann from examples procured by Emin at Bukoba. The above-mentioned specimens in the present collection agree perfectly with the types of *N. minima* from Ruwenzori.

NIGRITA BRUNNESCENS.

Nigrita brunnescens Reich. iii. p. 167 (1904); Shelley, iv. p. 140 (1905).

No. 5241. *a.* ♂ imm. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Iris dark brown; bill black, spots on gape yellow; feet dark brown.

Apparently an immature male of the Southern Chestnut-breasted Negro-Finch, the upper side being of precisely the same colour as in the typical *N. brunnescens.*

SPORÆGINTHUS SUBFLAVUS (Vieill.).

Estrilda subflava Reich. iii. p. 186 (1904) [part.]; Shelley, iv. p. 207 (1905).

Nos. 5051, 5052. *a, b.* ♂. Mfumbiro Volcanoes, 5000 ft., 25th Nov.

Iris orange; bill red; feet pale brown.

These specimens are undoubtedly referable to this species and not to the Southern Zebra-Waxbill [*S. clarkei* (Shelley)], which occurs as far north as Msara, N.E. Kenya.

SPORÆGINTHUS MELPODA (Vieill.).

Estrilda melpoda Reich. iii. p. 186 (1904); Shelley, iv. p. 212 (1905).

No. 5087. *a.* ♀. North of Lake Tanganyika, 3000 ft., 17th Dec.

Nos. 5199, 5210. *b, c.* ♂. Ponthierville, Upper Congo, 2000 ft., 11th & 18th Feb.

Iris brown; bill red; feet brown.

The occurrence of the Orange-cheeked Waxbill on the Upper Congo and to the north of Lake Tanganyika appears to extend its known range a long way to the east. Dr. Reichenow gives its habitat as West Africa, from Senegambia to the Congo; while Captain Shelley says that it ranges from Senegambia into Angola.

ESTRILDA MINOR (Cab.).

Estrilda astrild minor Reich. iii. p. 180 (1904).

Estrilda minor Shelley, iv. p. 198 (1905).

Nos. 5021, 5030, 5031, 5034. *a–d.* ♂ ♀. Mfumbiro Volcanoes, 5000 ft., 16th–19th Nov.

Nos. 5099, 5100. *e, f.* ♂. North of Lake Tanganyika, 3000 ft., 20th Dec.

Iris dark hazel; bill red; feet black.

ESTRILDA ROSEICRISSA Reich.

Estrilda roseicrissa Reich. iii. p. 184 (1904); Shelley, iv. p. 215 (1905).

Nos. 5079, 5080. *a, b.* ♂ ♀. Lake Kivu, 4900 ft., 15th Dec.

Iris dark red; bill red; feet brown.

The birds procured by Mr. Carruthers are apparently a pair, and the male is marked "breeding." Both specimens have the lower part of the abdomen and flanks bright pink, the female being rather the more brightly coloured of the two. An adult female killed with a young male on S.E. Ruwenzori on the 2nd of June has only a slight wash of pink on the feathers of the lower abdomen and flanks. Probably the absence of colour is partly due to season, as the plumage is decidedly worn.

ANAPLECTES MELANOTIS (Lafr.).

Anaplectes melanotis Reich. iii. p. 26 (1904); Shelley, iv. p. 338 (1905) [part.].

No. 5010. *a.* ♂. S.W. Uganda, 4000 ft., 29th Sept.

Iris dark hazel; bill red; feet pale brown.

Captain Shelley has included *A. blundelli* Grant as a variety of the Black-eared Scarlet Weaver-Finch, but there does not seem to be the slightest evidence to shew that the former, which has the back black, is not a perfectly distinct species.

HETERHYPHANTES NIGRICOLLIS (Vieill.).

Ploceus nigricollis Reich. iii. p. 44 (1904).

Heterhyphantes nigricollis Shelley, iv. p. 381 (1905).

No. 5168. *a.* ♀. Below Kasongo, Upper Congo, 2000 ft., 5th Feb.

Iris dark hazel; bill black; feet grey.

Examples of Vieillot's Black-and-Yellow Weaver-Finch were also procured by the Ruwenzori Expedition at Fort Beni on the Semliki River and in the Mpanga Forest near Fort Portal.

HYPHANTORNIS FEMININA Grant.

Hyphantornis feminina Grant, Bull. B. O. C. xxi. p. 15 (1907).

No. 5189. *a.* ♂ imm. Below Kasongo, Upper Congo, 2000 ft., 9th Feb.

Iris orange; bill black; feet brown.

This specimen is apparently an immature male of this species, which I recently described as different from *H. abyssinicus* (Gmel.), the female having the under parts mostly yellow as in *H. cucullatus* (Müll.).

HYPHANTORNIS XANTHOPS Hartl.

Ploceus xanthops Reich. iii. p. 88 (1904).

Xanthophilus xanthops Shelley, iv. p. 483 (1905).

No. 5058. *a.* ♂. Lake Kivu, 4900 ft., 30th Nov.

No. 5111. *b.* ♂. North-west of Lake Tanganyika, 29th Dec.

Iris white; bill black; feet brown.

A series of Hartlaub's Golden Weaver-Finch was obtained on Ruwenzori, but the great majority of the specimens procured were immature birds. The types of *H. xanthops* (Hartl.), *H. camburni* Sharpe, and *H. jamesoni* Sharpe are all in the British Museum, and after comparing these and examining the fine series now available I must agree with Captain Shelley in regarding the two latter as synonyms of the former.

MALIMBUS CASSINI (Elliot).

Malimbus cassini Reich. iii. p. 19 (1904); Shelley, iv. p. 350 (1905).

No. 5243. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Iris dark brown; bill black; feet dark brown.

I have compared this male with the type specimen of *Sycobius cassinii* Elliot, which it resembles in all particulars. Mr. Bates obtained examples of this species at Efulen, Camaroon. The present record extends its known range a long way to the east.

MALIMBUS NIGERRIMUS (Vieill.).

Ploceus nigerrimus Reich. iii. p. 50 (1904).

Melanopteryx nigerrima Shelley, iv. p. 362 (1905).

No. 5222. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 20th Feb.

Iris yellow; bill black; feet brown.

BRACHYCOPE ANOMALA (Reichenow).

Brachycope anomala Reich. iii. p. 97 (1904); Shelley, iv. p. 446 (1905).

Nos. 5200, 5223. *a, b.* ♂ [♀]. Ponthierville, Upper Congo, 2000 ft., 11th & 20th Feb.

Iris dark brown; bill black; feet brown.

The adult male and what appears to be the adult female of this curious short-tailed Weaver are interesting additions to the British Museum, the only other examples of this rare species in the collection being two adult males from Jabbir, on the Welle Makua (Bomakandi) River, procured by Mr. J. J. Harrison on the 26th of March, 1904.

The bird supposed to be a female agrees perfectly with the description given by Captain Shelley of female specimens in the Tring Museum obtained by Bonny.

SPERMOSPIZA POLIOGENYS.

Spermospiza poliogenys Grant, Bull. B. O. C. xix. p. 32 (1906).

No. 5173. *a.* ♀. Below Kasongo, Upper Congo, 2000 ft., 7th Feb.

Iris dark hazel; bill horn-blue, pale at the tip; feet black.

This female appears to be a somewhat younger example of the Grey-cheeked Weaver-Finch (*S. poliogenys*), first described from Fort Beni on the Semliki River. It differs chiefly from the type, which is also a female, in having the chin, throat, and chest vermilion instead of crimson-scarlet, and in lacking the small patch of crimson-tipped feathers on the sides of the lower breast. A number of greyish-buff feathers in the middle of the belly seem to indicate that the bird is scarcely mature.

[Found among damp undergrowth in very thick forest.—D. C.]

PETRONIA SUPERCILIARIS Blyth.

Petronia flavigula Shelley, iii. p. 265, pl. xxviii. fig. 2 (1902).

Petronia superciliaris Reich. iii. p. 244 (1904).

No. 5144. *a.* ♂. North-west of Lake Tanganyika, 3000 ft., 7th Jan.

Iris dark hazel; bill dark brown; feet dark grey.

The occurrence of the Southern Rock-Sparrow on the Upper Congo carries its known range a little further to the north. It has been recorded as far north as Ussure on the east and Leopoldville on the west.

PASSER DIFFUSUS (Smith).

Passer diffusus Shelley, iii. p. 251 (1902).

Passer griseus Reich. iii. p. 230 (1904).

No. 5163. *a.* ♀. East of Kasongo, Upper Congo, 2000 ft., 28th Jan.

Iris brown; bill black; feet brown.

Presumably this bird should belong to the form mentioned by Dr. Reichenow under the name of *P. griseus ugandæ*; but the wing measures 82 mm. I agree with the conclusions arrived at by Captain Shelley and include all the four forms that have been recognised under the present heading, as I am unable to find any characters by which they may be separated.

CHRYSOMITRIS FRONTALIS.

Spinus citrinelloides frontalis Reich. iii. p. 275 (1904).

Nos. 5020, 5026. *a, b.* ♂ ♀. Mfumbiro Volcanoes, 5000 ft.

Iris, bill, and feet brown.

A large series of this handsome Siskin was collected by the Ruwenzori Expedition. All the males have the yellow frontal band narrowly bordered anteriorly with black. In the male collected by Mr. Carruthers this character is scarcely apparent, but in other respects it agrees. The black markings on the upper parts vary greatly among specimens from the same locality and are no doubt a sign of age, the oldest males having the top of the head and back bright olive-green with very narrow black shaft-streaks.

SERINUS SHARPEI Neumann.

Serinus sharpei Neumann, J. f. O. 1900, p. 287; Reich. iii. p. 266 (1904); Swynnerton, Ibis, 1908, p. 26.

Serinus shelleyi Neumann, Orn. Monatsb. xi. p. 184 (1903).

Serinus sulphuratus Grant, Ibis, 1905, p. 206; Swynnerton, Ibis, 1908, p. 26.

Nos. 5033, 5035. *a, b.* ♂ ♀. Mfumbiro Volcanoes, 5000 ft., 18th & 19th Nov.

Iris dark brown; bill and feet brown.

These birds belong to the smaller yellower-breasted form of *S. sulphuratus*, which has been separated by Professor Neumann under the above heading.

Though typical large-billed, green-breasted examples of *S. sulphuratus* (Linn.) from Cape Colony differ considerably from typical examples of *S. sharpei* from East Africa, a series of birds from the intermediate localities shews that the two forms grade imperceptibly into one another. As regards *S. shelleyi* Neumann, we entirely agree with Dr. Reichenow in regarding it as synonymous with *S. sharpei*. This form may be said to range from Uganda southwards to Natal, but birds from the latter locality are intermediate as regards the greater size of the bill and length of the wing, and in the amount of greenish wash on the breast.

The bird obtained at Helvetia by Mr. D. M. Stanley and mentioned by Mr. Swynnerton (above, p. 26) under the name of *S. sulphuratus* is now in the British Museum. It is a typical example of *S. sharpei*.

SERINUS ICTERUS (Vieill.).

Serinus butyraceus (Linn.); Shelley, iii. p. 193 (1902).

Serinus icterus Grant, Ibis, 1905, p. 206; Swynnerton, Ibis, 1908, p. 27.

No. 5113. *a.* ♀. North-west of Lake Tanganyika, 2800 ft., 29th Dec.

Iris dark brown; bill black; feet dark brown.

SERINUS GRAUERI.

Serinus striolatus graueri Hartert, Bull. B. O. C. xix. p. 84 (1907).

No. 5049. *a.* ♀. Mfumbiro Volcanoes, 7000 ft., 24th Nov.

Iris dark brown; bill and feet brown.

Dr. Hartert has separated the Streaked Seed-eater from Ruwenzori under this heading on account of its darker plumage. The same dark form was procured by Mr. Carruthers on the Mfumbiro Volcanoes.

FRINGILLARIA TAHAPISI (Smith).

Fringillaria tahapisi Shelley, iii. p. 164 (1902) [part., *nec ex* Sokotra]; Reich. iii. p. 289 (1904).

No. 5138. *a.* ♀. North-west of Lake Tanganyika, 4000 ft., 6th Jan.

Iris dark brown; bill black; feet brown.

Under this heading Captain Shelley has included the Rock-Bunting (*F. insularis*) from Sokotra; but this pale insular form can be easily distinguished.

ANTHUS RUFULUS Vieill.

Anthus rufulus Shelley, ii. p. 319 (1900).

Anthus rufulus cinnamomeus Reich. iii. p. 313 (1904).

No. 5023. *a.* ♂. Mfumbiro Volcanoes, 5000 ft., 16th Nov.

Iris dark hazel; bill black, of a pale horn-colour at the base of the lower mandible; feet brown.

An immature example of the Rufous Pipit in very worn plumage.

ANTHUS NICHOLSONI Sharpe.

Anthus nicholsoni Shelley, ii. p. 312 (1900); Reich. iii. p. 316 (1904).

No. 5084. *a.* ♀. North of Lake Tanganyika, 3000 ft., 16th Dec.

Iris dark brown; upper mandible black, lower mandible brown; feet pale brown.

This is apparently an immature example of Nicholson's Pipit, with the characteristic short bill. The marked whitish eyebrow-stripe continued backwards along the side of the head, the well-marked blackish stripe down each side of the throat, and the indefinite light pattern on the outer tail-feathers, in conjunction with the moulting outer primary-quills, seem to indicate that the bird is in its first plumage. It has the feathers of the upper parts very dark brown narrowly margined with sandy brown.

NECTARINIA ERYTHROCERIA Heugl.

Cinnyris erythrocerius Shelley, ii. p. 49 (1900).

Nectarinia erythrocerca Reich. iii. p. 495 (1905).

No. 5016. *a.* ♂. North of Lake Albert Edward, 3000 ft., 12th Oct.

Iris dark hazel; bill and feet black.

I have followed Dr. Reichenow in placing Heuglin's Wedge-tailed Sun-bird in the genus *Nectarinia*. The middle tail-feathers measure 2·7 inches, while the second pair measure 1·9.

CINNYRIS IGNEIVENTRIS.

Cinnyris venustus igneiventris Reich. iii. p. 475 (1905).

No. 5067. *a.* ♂ vix ad. Lake Kivu, 4900 ft., 1st Dec.

Iris dark hazel; bill and feet black.

A large series of the Fire-bellied Sun-bird was procured by the Ruwenzori Expedition. The present specimen, though still lacking the full plumage on the crown, has the fiery orange of the lower breast and belly very brilliant.

CINNYRIS FALKENSTEINI Fischer & Reichenow.

Cinnyris falkensteini Shelley, ii. p. 66, pl. iii. fig. 1 (1900).

Cinnyris venustus falkensteini Reich. iii. p. 474 (1905).

No. 5137. *a.* ♂ vix ad. North-west of Lake Tanganyika, 4000 ft., 5th Jan.

Iris dark hazel; bill and feet black.

This male of Falkenstein's Sun-bird is in nearly adult dress, but still retains a few feathers of the first plumage on the forehead and upper mantle, while the lower breast and belly are yellow without any trace of orange. In this respect it exactly resembles somewhat immature examples in the British Museum from Kilimanjaro.

CINNYRIS TANGANYIKÆ Grant.

Cinnyris tanganyikæ Grant, Bull. B. O. C. xix. p. 105 (1907).

No. 5132. *a.* ♂. North-west of Lake Tanganyika, 4000 ft., 4th Jan. (*Type of the species.*)

Iris dark hazel; bill and feet black.

This new Sun-bird is most nearly allied to *C. bouvieri* Shelley, but is somewhat larger and has a longer bill, while the pectoral tufts are orange and yellow instead of scarlet and yellow.

	Adult male of *C. tanganyicæ* Grant.	Adult male of *C. bouvieri* Shelley.
	in.	in.
Total length	4·7	4·1
Culmen	1·02	0·9
Wing	2·25	2·1
Tail	1·55	1·4
Tarsus	0·65	0·62

CINNYRIS SUPERBUS (Shaw).

Cinnyris superbus Shelley, ii. p. 41 (1900); Reich. iii. p. 477 (1905).

Nos. 5169, 5170, 5179. *a–c.* ♂ ♀. Below Kasongo, Upper Congo, 2000 ft., 5th–7th Feb.

Iris dark hazel; bill and feet black.

CINNYRIS CUPREUS (Shaw).

No. 5032. *a.* ♂. Mfumbiro Volcanoes, 5000 ft., 18th Nov.

No. 5066. *b.* ♂. Lake Kivu, 4900 ft., 1st Dec.

Iris very dark hazel; bill and feet black.

Examples of the Copper-coloured Sun-bird from West Africa are on the whole somewhat smaller than birds from Uganda and have a shorter bill. The type of Shaw's *Certhia cuprea* came from Malimbe at the mouth of the Congo River.

CINNYRIS MARGINATUS Grant.

Cinnyris marginatus Grant, Bull. B. O. C. xix. p. 106 (1907).

No. 5180. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 8th Feb. (*Type of the species.*)

This Sun-bird is most nearly allied to *C. reichenowi* Sharpe, but is smaller and has a much shorter bill. The green of the upper surface is less golden, the upper tail-coverts are tipped with peacock-blue with purple reflections, and the scarlet breast-feathers are margined with purplish blue. The iris is hazel and the bill and feet are black. The total length is about 3·6 inches; the culmen 0·65; the wing 1·86; the tail 1·0; and the tarsus 0·5.

The discovery of this very distinct though diminutive species is of considerable interest.

CINNYRIS OBSCURUS (Jard.).

Cyanomitra obscura Shelley, ii. p. 125 (1900); Reich. iii. p. 450 (1905).

Nos. 5167, 5187, 5214, 5239. *a–d.* ♂ imm. et ♀. Between Kasongo and Ponthierville, Upper Congo, 2000 ft., 4th–22nd Feb.

Iris dark hazel; bill and feet black.

An immature male and three females of the Pale Olive Sun-bird collected by Mr. Carruthers agree well with West-African specimens. Adult males were procured by the Ruwenzori Expedition at Fort Beni on the Semliki, and in the Mpanga Forest near Fort Portal.

CINNYRIS ANGOLENSIS Less.

Chalcomitra angolensis Shelley, ii. p. 111 (1900); Reich. iii. p. 461 (1905).

No. 5198. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 11th Feb.

Iris dark hazel; bill and feet black.

The fine male example of the Green-throated Brown Sun-bird procured by Mr. Carruthers at the above-given locality appears to extend the known range of the species somewhat further to the south-east.

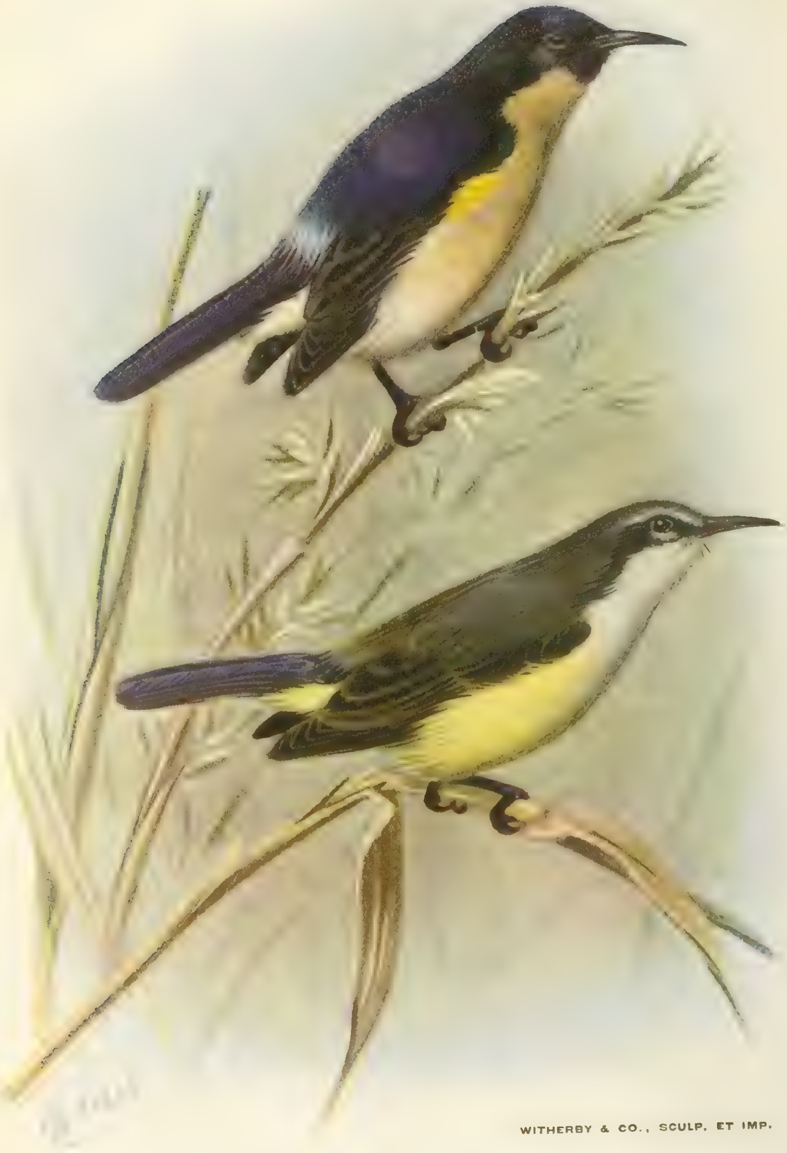
CYANOMITRA CYANOLÆMA.

Cyanomitra cyanolæma Shelley, ii. p. 130 (1900).

Chalcomitra cyanolæma Reich. iii. p. 456 (1905).

No. 5238. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Ibis. 1908. PL. V.



WITHERBY & CO., SCULP. ET IMP.

ANTHOTHREPTES CARRUTHERSI, ♂ & ♀.

Iris dark hazel; bill and feet black.

This example of the Blue-throated Brown Sun-bird seems to have the bill slightly shorter than in West-African specimens. The culmen from the anterior margin of the nostril measures 0·69 inch; while in males from Camaroon it varies from 0·7 to 0·72, in males from Fernando Po from 0·75 to 0·79, and in males from Gaboon from 0·71 to 0·79. Four males from Fantee have the bill 0·82; and in one male from Angola it measures 0·8. It thus appears that examples from Fantee have the longest bill, and that the specimen from the Upper Congo (Kasongo District) has the shortest. The wing-measurements shew little variation; in the present specimen the wing measures 2·65 inches.

ANTHOTHREPTES CARRUTHERSI. (Plate V.)

Anthothreptes carruthersi Grant, Bull. B. O. C. xix. p. 106 (1907).

Nos. 5118, 5124, 5125. *a–c.* ♂ ♀. West of Lake Tanganyika, 3000–4000 ft., 2nd & 3rd Jan. (*Types of the species.*)

Iris dark hazel; bill and feet black.

This handsome Sun-bird is evidently most nearly allied to *A. angolensis* Neumann [*cf.* Orn. Monatsb. xiv. p. 67 (1906)], which I had overlooked in my original description of it. Through the kindness of Mr. Rothschild, I have been able to examine the type of this species, which was procured in Angola by Dr. W. J. Ansorge. *A. carruthersi* appears to differ from it chiefly in having the long downy feathers of the rump (below the metallic peacock-blue patch) widely tipped with *white*, and the buff wash on the fore-neck, breast, and the rest of the underparts much richer and darker. Both species have the same golden-yellow pectoral tufts, and in this respect differ from the allied forms *A. longuemarii* &c., which have the pectoral tufts sulphur-yellow or pale chrome-yellow. In *A. carruthersi* and *A. angolensis* the nape is *sooty black*, interrupting the metallic purple crown and mantle, which are confluent in *A. longuemarii* and the allied forms.

The female is much like that of *A. longuemarii*, the belly and under tail-coverts being sulphur-yellow.

[This Sun-bird was only met with at one place to the west of Lake Tanganyika, where a few individuals were seen all feeding on the same tree.—D. C.]

ANTHOTHREPTES HYPODILA (Jard.).

Nectarinia hypodilus Jard. Contr. Orn. p. 153 (1851).

Anthodiæta subcollaris Reichenb. Synops. Av. *Scansoriæ*, p. 293 (1854) [part., Fernando Po].

Anthothreptes hypodila Shelley, ii. p. 151 (1900) [part.].

Anthreptes collaris hypodilus Reich. iii. p. 443 (1905) [part.].

Nos. 5186, 5204, 5215, 5234. *a–d.* ♂ ♀. Between Kasongo and Ponthierville. Upper Congo, 2000 ft., 9th–21st Feb.

Iris dark hazel; bill and feet black.

The type of this darker-breasted Collared Sun-bird was procured at Fernando Po by Mr. L. Fraser. From that island it ranges to Camaroon, Gaboon, and eastwards to the upper waters of the Congo, where four examples were procured by Mr. Carruthers. Both adult males and females are easily distinguished from *A. zambesiana* by the colour of the breast, which is olive-yellow, only the middle of the belly being of a brighter yellow.

ANTHOTHREPTES ZAMBESIANA (Shelley).

Anthodiæta zambesiana Shelley, Monogr. Nect. ii. p. 343, pl. iii. fig. 3 (1876).

Anthothreptes hypodila Shelley, ii. p. 151 (1900) [part.].

No. 5006. *a.* ♀. S.W. Uganda, 4000 ft., 27th Sept.

Iris dark hazel; bill and feet black.

An adult female of the Zambesi Collared Sun-bird was procured by Mr. Carruthers in South-west Uganda. I cannot agree with Captain Shelley (who is followed by Dr. Reichenow) in uniting this bright yellow-breasted species with the much darker-breasted *A. hypodila*. With a large series of both for comparison there is no difficulty in separating the two forms by their geographical distribution. The type of *A. zambesiana* was obtained at Shupanga, on the Zambesi, by Sir John Kirk, and there are typical specimens of this form in the British Museum from Lorenzo Marques, Mozambique, East Africa, Uganda, Wadelai, the Niger, Ashanti, and Sierra Leone.

It must, however, be noted that most of the male birds from the last-named locality have the yellow on the breast rather brighter than those from the east coast.

Laniarius poliocephalus Licht.

No. 5128. *a.* ♀. North-west of Lake Tanganyika, 4000 ft., 3rd Jan.

Iris orange; bill black; feet blue-grey.

This Grey-headed Bush-Shrike was shot whilst feeding its young.

The identification of the bird procured by Mr. Carruthers has obliged me to re-examine all the yellow-breasted forms of this section of the genus, often kept separate under the name of *Malaconotus.*

Of the yellow-breasted forms, I am able to recognise four or possibly five species, which may be distinguished as follows:—

A. White patch in front of the eye; throat yellow.	
a′. With the upper part of the breast bright chestnut-brown	*L. approximans.*
b′. With the upper part of the breast rich cinnamon-brown	*L. hypopyrrhus.*
c′. With the upper part of the breast usually faintly washed with cinnamon	*L. poliocephalus.*
d′. With the underparts entirely bright yellow.	*L. monteiri.*
B. No white patch in front of the eyes; throat orange-yellow	*L. lagdeni.*

(1) **L. approximans.**

Archolestes approximans Cab. in v. d. Decken, Reisen Ost-Afr. iii. p. 27 (1869).

Malaconotus poliocephalus schoanus Neum. Orn. Monatsb. xi. p. 90 (1903).

Malaconotus olivaceus hypopyrrhus Reich. (nec Hartl.) ii. p. 602 (1903).

Hab. Ranging from Southern Abyssinia southwards to the Pangani River.

Prof. Neumann has separated the Abyssinian bird from the East-African form (*L. approximans*), under the name *M. p. schoanus*; the difference between the two is entirely one of size, the Abyssinian bird being slightly larger.

L. approximans: wing 4·2–4·3 inches.

L. schoanus: wing 4·6–4·9 inches.

(2) L. HYPOPYRRHUS.

Malaconotus hypopyrrhus Hartl. Syst. Verz. Mus. Bremen, p. 61 (1844); Neumann, J. f. O. 1906, p. 155.

Laniarius starki W. L. Sclater, Ibis, 1901, p. 152.

Malaconotus starki Shelley, Ibis, 1901, p. 170; Sharpe, Hand-l. iv. p. 289 (1903).

Malaconotus olivaceus starki Reich. ii. p. 603 (1903).

Hab. Ranging from the Pangani River to Cape Colony.

According to Prof. Neumann, who has examined the type, *M. hypopyrrhus* Hartl. is undoubtedly an example of the South-African form.

(3) L. POLIOCEPHALUS.

Lanius poliocephalus Licht. Verz. Doubl. p. 45 (1823).

Malaconotus blanchoti Steph. in Shaw's Gen. Zool. xiii. pt. ii. p. 161 (1825).

Malaconotus olivaceus Reich. (nec Shaw) ii. p. 601 (1903).

Malaconotus poliocephalus Sharpe, Hand-l. iv. p. 289 (1903).

Hab. Ranging from Senegambia to Camaroon and apparently to the north-west of Lake Tanganyika, as Mr. Carruthers's specimen is indistinguishable from birds from the Gambia.

(4) L. MONTEIRI.

Laniarius monteiri Sharpe, P. Z. S. 1890, p. 148, pl. xiii. fig. 1.

Malaconotus catharoxanthus Neumann, J. f. O. 1899, p. 391; id. Orn. Monatsb. xi. p. 90 (1903).

Hab. Ranging from Southern Abyssinia, through Niam-Niam to Angola, and, according to Prof. Neumann, westwards to Lake Mweru.

It seems probable that the type of *L. monteiri* is a somewhat abnormal specimen and that the unusual development of white on the lores, round the eye, and on the sides of the neck is due to partial albinism. The type specimen, described by Dr. Sharpe, was procured on the Rio Dande in North Angola; and there is also a specimen in the British Museum from Caconda, a little further to the south. This second specimen has the white confined to the lores, as is usual among birds of this group, but in other respects it is perfectly similar to the type. Two specimens from Abyssinia and one from Niam-Niam, which have been identified by Professor Neumann as examples of his *M. catharoxanthus*, are likewise perfectly similar, and the breast is of precisely the same shade of yellow. The Niam-Niam specimen being in freshly moulted plumage is naturally altogether brighter than the more or less worn examples from Abyssinia and Angola.

The fact is that *L. monteiri* Sharpe is *barely* distinguishable from *L. poliocephalus*, for in some examples from Senegambia the cinnamon wash on the breast is absent; while in the bird from Caconda, as well as in those from Abyssinia, there are distinct traces of cinnamon on the sides of the breast.

(5) L. LAGDENI.

Laniarius lagdeni Sharpe, P. Z. S. 1884, p. 54, pl. v.

Hab. Interior of the Gold Coast, Ruwenzori, and the Mfumbiro Volcanoes.

The type of this rare Bush-Shrike remained unique until a second specimen was procured by Mr. Gerald Legge, on Ruwenzori, at an altitude of 9000 feet. Subsequently a third example, from the Mfumbiro Volcanoes, was sent to the Tring Museum by Herr Grauer.

Laniarius major Hartl.

Laniarius major Reich. ii. p. 580 (1903).

No. 5112. *a.* ♀. North-west of Lake Tanganyika, 2800 ft., 29th Dec.

Iris reddish-brown; bill black; feet grey.

This example of the Greater Bush-Shrike has two of the innermost secondary quills margined externally with white; the outer pair of tail-feathers are very narrowly bordered all round and narrowly tipped with white.

Laniarius dohertyi Rothsch.

Laniarius dohertyi Rothsch. Bull. B. O. C. xi. p. 52 (1901).

No. 5045. *a.* ♂. Mfumbiro Volcanoes, 7000 ft., 24th Nov.

Iris dark hazel; bill black; feet grey.

No additional specimens of this beautiful Bush-Shrike had been procured since the species was first observed on the Mau Escarpment by the late Mr. W. Doherty. Its discovery on the Mfumbiro Volcanoes is therefore of great interest. Mr. Carruthers tells me that he found it in very thick undergrowth and that it had a fine flute-like note.

Dryoscopus affinis (G. R. Gray).

Dryoscopus affinis Reich. ii. p. 590 (1903).

No. 5203. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 18th Feb.

Iris bright orange; bill black; feet grey.

The male of this Puff-back Shrike is similar to the specimen in the British Museum which is said to be the type of *Hapalophus affinis* G. R. Gray, and to have come from Zanzibar. It shews slight traces of white at the base of some of the shorter scapulars. Dr. Reichenow describes this species as having the scapulars mixed with white, but this is certainly not always the case among East-African birds, and it would seem as though the absence or presence of white was a variable character of secondary importance. The type of *D. affinis* does not appear to differ from the West-African form distinguished as *D. senegalensis* (Hartl.) by Reichenow. Possibly the females of this latter form may, as a whole, have the lower back and rump somewhat greyer than the East-African birds, but in one female from Zanzibar these parts are quite as grey as in the western form. The birds available for examination from the East-African coast are, however, too few to enable one to draw definite conclusions.

DRYOSCOPUS HAMATUS Hartl.

Dryoscopus cubla hamatus Reich. ii. p. 594 (1903).

No. 5127. *a.* ♂. North-west of Lake Tanganyika, 4000 ft., 3rd Jan.

Iris orange; bill black; feet grey.

A male of the Lesser Puff-back Shrike apparently belongs to this East-African form. It is distinguished from *D. cubla* on account of the female having the lower back and rump pure grey, not washed with olive-brown. Of three females of typical *D. cubla* from Swaziland in the British Museum, two have the lower back slightly washed with olive-brown, but the third shews hardly a trace of that colour and is barely separable from females of *D. hamatus*. On the whole, however, there is a distinct difference to be seen in series of these birds from South and East Africa.

TELEPHONUS ANCHIETÆ Boc.

Pomatorhynchus anchietæ Reich. ii. p. 553 (1903).

Pomatorhynchus reichenowi (Neum.); Reich. ii. p. 552 (1903).

No. 5136. *a.* ♀. North-west of Lake Tanganyika, 4000 ft., 6th Jan.

Iris mauve; bill black; feet grey.

The female of this Bush-Shrike procured by Mr. Carruthers has the upper tail-coverts black, fringed with sandy-brown. In this respect it resembles a female example from Nyasaland, but two others from the same country have the upper tail-coverts sandy-brown, blackish only towards the base of the feathers. This character is therefore unimportant, and cannot be used in separating *T. anchietæ* from *T. reichenowi* Neum. The British Museum possesses typical examples of *T. reichenowi* from Lamu, Dar-es-Salaam, and Pangani, and a series of *T. anchietæ* from Nyasaland. I am unable to separate them, as even in size *T. reichenowi* (wing 69–75 mm.) does not appear to differ from typical *T. anchietæ* (wing 73–77 mm.).

NICATOR CHLORIS (Less.).

Nicator chloris Reich. ii. p. 554 (1903).

Nos. 5218, 5221. *a, b.* ♂ ♀. Ponthierville, Upper Congo, 2000 ft., 19th Feb.

Iris dark brown; bill black; feet grey.

Several examples of this Spot-winged Bush-Shrike were also procured by the Ruwenzori Expedition at Fort Beni and in the Mpanga Forest near Fort Portal.

PRINIA MYSTACEA (Rüpp.).

Prinia mystacea Reich. iii. p. 590 (1905).

No. 5039. *a.* ♂. Mfumbiro Volcanoes, 5000 ft., 20th Nov.

No. 5101. *b.* ♀. North of Lake Tanganyika, 3000 ft., 21st Dec.

No. 5153. *c.* Imm. East of Kasongo, Upper Congo, 2500 ft., 9th Jan.

Iris pale brown; bill black; feet pale brown.

A large series of the Tawny-flanked Grass-Warbler was also procured by the Ruwenzori Expedition.

HYLIA PRASINA (Cass.).

Hylia prasina Reich. iii. p. 622 (1905).

Nos. 5205, 5206, 5233, 5246, 5247. *a–e.* ♂. Ponthierville, Upper Congo, 2000 ft., 18th–22nd Feb.

Iris dark hazel; bill black; feet olive-green.

The examples of this Tree-Warbler procured by Mr. Carruthers at Ponthierville, Upper Congo, and a number of specimens collected by the Ruwenzori Expedition in the Semliki Valley, Eastern Congo Forest, and Mpanga Forest, Fort Portal, display many interesting points which do not appear to have been recorded:—

(1) The male is much larger than the female, the measurements of the wing varying from 2·6 to 2·75 inches, as compared with 2·25 to 2·4 in the female.

(2) The female generally has the plumage of the crown darker and less olive than that of the male.

(3) Very young male and female specimens have the entire top of the head, nape, and sides of the head dark grey, the crown and nape being washed with olive; the superciliary stripe, continued along the side of the occiput, pale grey, and the throat and fore-neck whitish washed with the same grey tint. The male bird from Ponthierville (No. 5206), which is rather older than the female, has the bill black, becoming paler towards the tip, and the feet olive-green. The female from Efulen, Camaroon, which has the flight-feathers still in quill, and is little more than a nestling, has the entire bill of a pale yellowish horn-colour, with the exception of a dark stripe at the tip of both mandibles, and the legs of a pale yellowish horn-colour.

(4) In a somewhat older male bird from Ponthierville (No. 5233) the crown is olive, brighter than that of the adult, the superciliary stripe is of a pale somewhat indefinite greenish-white; the cheeks are much the same dusky colour as the lores and the streak through the eyes; and the underparts are rather dull greyish-olive, darker and more olive than those of the adult.

(5) Adult males killed when breeding in October have the pale yellowish-white eyebrow-stripe and the olive of the cheek distinctly brighter than the male birds killed by Mr. Carruthers in February.

[This bird haunts the tops of the highest trees in the forest.—D. C.]

Eremomela mentalis Reichenow.

Eremomela mentalis Reich. iii. p. 639 (1905).

Eremomela congensis Reich. iii. p. 639 (1905).

No. 5140. *a.* ♂. East of Kasonga, Upper Congo, 3000 ft., 7th Jan.

Iris pale yellow; bill black; feet pale brown.

The bird described by Dr. Reichenow as *E. congensis* and believed by him to occur together with *E. mentalis* at Leopoldville is almost certainly an immature example of the latter species. In the British Museum there is a typical example of the so-called *E. congensis* procured at Leopoldville by Bohndorff. Similar changes of plumage occur in the allied species *E. scotops* Sundev., the back in the adult being grey, while in what appear to be younger birds it is strongly washed with olive.

Eremomela badiceps (Fras.).

Eremomela badiceps Reich. iii. p. 641 (1905).

No. 5228. *a.* ♀ imm. Ponthierville, Upper Congo, 2000 ft., 20th Feb.

Iris dark hazel ; bill black ; feet pale brown.

This immature example of the Chestnut-headed Bush-Warbler is in an interesting stage of plumage. It has the top of the head dark brown, and the back dark brownish-grey, washed with olive. The chin, throat, a patch on the crop, and the belly are pale yellow, while the black band across the fore-neck is fairly well defined.

Phylloscopus sibilatrix (Bechst.).

Phylloscopus sibilator Reich. iii. p. 645 (1905).

No. 5219. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 19th Feb.

Iris, bill, and feet dark brown.

This example of the Wood-Wren is in full moult; the new quills and tail-feathers are almost complete.

Phylloscopus trochilus (Linn.).

Phylloscopus trochilus Reich. iii. p. 644 (1905).

No. 5086. *a.* ♀. North of Lake Tanganyika, 3000 ft., 16th Dec.

Iris dark brown ; bill and feet brown.

This Willow-Wren has the plumage much worn and is commencing to moult; the sixth primary-quill in the right wing being partially grown, while in the left wing the complete set of old feathers is still retained.

Schœnicola apicalis (Cab.).

Schœnicola apicalis Reich. iii. p. 577 (1905).

No. 5008. *a.* ♂ vix ad. Mbarara, South-west Uganda, 4000 ft., 27th Sept.

No. 5078. *b.* ♂. Lake Kivu, 4900 ft., 15th Dec.

Iris dark hazel; upper mandible black, lower mandible grey; feet pale brown.

The specimen of the Fan-tailed Reed-Warbler from Mbarara has the colour of the back of a rather darker shade of brown than is usual. It is not a fully adult bird, for the yellowish-white feathers down the middle of the breast and belly are evidently remains of the immature plumage. There is a similar dark-backed specimen in the British Museum from the Nyika Plateau (6000 feet), procured by Mr. A. Whyte in June 1896.

CISTICOLA PICTIPENNIS Madarász.

Cisticola pictipennis Reich. iii. p. 564 (1905).

No. 5204, 5025. *a, b.* ♂ ♀. Mfumbiro Volcanoes, 5000 ft., 17th Nov.

Iris brown; upper mandible black, lower mandible pale yellow; feet pale yellow.

I am a little doubtful whether I am right in referring these Fan-tailed Warblers to *C. pictipennis*. Both birds have the forehead *greyish-brown* shading into dull chestnut-brown between the eyes, instead of being uniform chestnut to the base of the culmen, as is the case in all specimens of *C. cinerascens* that I have examined. In both specimens the tail is imperfect, being in full moult, and some of the outer feathers only are present; these are dark brownish-grey with a very wide (about 0·4 inch) subterminal black band and a wide white or whitish-buff tip. In *C. cinerascens* the tail is much browner and the black subterminal spots do not exceed 0·3 of an inch in width in the most strongly marked specimens. As regards the markings of the tail, the birds from Mfumbiro closely resemble several examples in the British Museum from Nyasaland which have been referred to *C. cinerascens*; but they differ from them in the brown coloration of the forehead.

There is a fine freshly moulted example of *C. pictipennis* from Nairobi in Mr. F. J. Jackson's collection.

♂: wing 2·15 inches (= 54 mm.).

♀: ,, 2·1 inches (= 53 mm.).

CISTICOLA TERRESTRIS (A. Smith).

Cisticola terrestris Reich. iii. p. 558 (1905).

No. 5097. *a.* ♂. North of Lake Tanganyika, 3000 ft., 19th Dec.

Iris dark hazel; bill black; feet very pale brown.

The Wren Fan-tail Warbler is widely distributed, ranging from Southern Abyssinia and East Africa to South Africa and westwards into Damaraland.

I may here remark that in Dr. Reichenow's work (*op. cit.* p. 559) we find under *C. brunnescens* "Aroharlaise IV. (*Pease*)." This is of course a mistake, for the bird which Sir Alfred Pease procured at Aroharlaise in April was *C. lavendulæ* (*cf.* Grant & Reid, 'Ibis,' 1901, p. 650), which he mentions immediately below. There we find the locality given as "Aroharlaise IV. (*Reid*)"!

CISTICOLA RUFA (Fraser).

Cisticola rufa Reich. iii. p. 567 (1905).

No. 5007. *a.* ♂. South-west Uganda, 4000 ft., 27th Sept.

Nos. 5083, 5096. *b, c.* ♂. North of Lake Tanganyika, 3000 ft., 16th & 19th Dec.

Nos. 5133, 5134. *d, e.* ♀ et ♂ imm. North-west of Lake Tanganyika, 4000 ft., 4th Jan.

Nos. 5142, 5143, 5158. *f–h.* ♂. East of Kasongo, Upper Congo, 2000–3000 ft., 7th & 20th Jan.

Iris pale brown; upper mandible black, lower mandible pale brown; feet yellow.

The young male (No. 5134) procured on the 4th of January is almost certainly an immature example of Fraser's Fan-tail Warbler. It is quite a young bird, with the chin, throat, and breast in the pale yellowish-white plumage of immaturity. Its tail, however, is somewhat longer than that of the adult male and measures 1·7 inches. In the adult the tail varies from 1·5 to 1·6 inches.

CISTICOLA RUFOPILEATA Reichenow.

Cisticola rufopileata Reich. iii. p. 561 (1905).

Nos. 5171, 5184, 5188, 5201, 5209. *a–e.* ♂. Between

Kasongo and Ponthierville, Upper Congo, 2000 ft., 6th–18th Feb.

Iris pale brown; bill black; feet pale brown.

[This Fan-tail Warbler was only found in the clearings in the forest on the banks of the Upper Congo. It haunts high trees as well as the long grass and has a peculiar note, quite different to that of any other species of *Cisticola* that I have heard.—D. C.]

CISTICOLA EMINI.

Cisticola rufopileata emini Reich. iii. p. 562 (1905).

No. 5146. ♂. West of Baraka, North-west Tanganyika, 2500 ft., 8th Jan.

Iris pale brown; bill black; feet pale brown.

I have referred this specimen with some doubt to *C. emini*. It agrees pretty closely with examples collected by Mr. F. J. Jackson at Entebbe, Kamassia, and Eldoma Ravine, but has the flight-feathers conspicuously margined on the outer web with rufous-chestnut and the *sides and flanks dull olive-grey*. Three of Mr. Jackson's specimens of Emin's Fan-tailed Warbler, killed in August and September, are in worn plumage, the rufous margins of the wing-feathers being worn and faded; a fourth specimen from Entebbe killed in April is in less worn plumage, but though the outer webs of the quills are margined with rufous the colour is not so bright as in the Baraka bird. In all Mr. Jackson's specimens of *C. emini* the breast and belly are *buff*, paler down the middle and darker and greyer on the sides and flanks. The wing measures 2·8 inches (=71 mm.); tail 2·2; tarsus 0·9.

CISTICOLA NUCHALIS.

Cisticola robusta nuchalis Reich. iii. p. 555 (1905).

No. 5018. *a.* ♂. North of Lake Albert Edward, 3000 ft., 12th Oct.

Nos. 5029, 5036, 5037, 5040, 5041. *b–f.* Mfumbiro Volcanoes, 5000 ft., 18th–20th Nov.

Iris pale brown; bill black; feet pale brown.

Males: wing 2·5–2·6 inches.

Females: wing 2·2–2·3 inches.

[One example (No. 5018) of this Fan-tail Grass-Warbler was met with in a very dry and barren district, but the remainder were procured among long grass and in a wet country.—D. C.]

CISTICOLA LUGUBRIS Rüpp.

Cisticola lugubris Reich. iii. p. 552 (1905).

No. 5015. *a.* ♂. North end of Lake Albert Edward, 3000 ft., 12th Oct.

Iris pale brown; upper mandible black, lower mandible whitish; feet very pale brown.

This example of the Buff-fronted Fan-tailed Warbler agrees closely with an example shot near Durban, Natal, and with one from Shonga, Niger River, in the British Museum. In all three there are no traces of black spots on the upper tail-coverts—a character commonly found in birds of this species. The wing measures 2·42 inches.

MELOCICHLA MENTALIS (Fraser).

Melocichla mentalis Grant, Ibis, 1907, p. 594.

No. 5085. *a.* ♂. North of Lake Tanganyika, 3000 ft., 16th Dec.

No. 5129. *b.* ♂. North-west of Lake Tanganyika, 4000 ft., 3rd Jan.

Iris yellow; upper mandible black, lower mandible pale grey; feet bluish-grey.

Examples from Tanganyika of this large Grass-Warbler belong to the typical dark-backed form.

SAXICOLA FALKENSTEINI Cab.

Phœnicurus familiaris falkensteini Reich. iii. p. 783 (1905).

No. 5054. *a.* ♂. Mfumbiro Volcanoes, 5000 ft., 25th Nov.

No. 5082. *b.* ♂. North of Lake Tanganyika, 3000 ft., 16th Dec.

Iris dark brown; bill and feet black.

MYRMECOCICHLA NIGRA (Vieill.).

Myrmecocichla nigra Finsch, Notes Leyd. Mus. xxii. p. 158 (1900); Reich. iii. p. 706 (1905) [part.].

Nos. 5159, 5161. *a, b.* ♂. East of Kasongo, Upper Congo, 2000 ft., 20th Jan.

Iris dark hazel; bill and feet black.

Dr. Reichenow has united *M. arnotti* (Tristr.) with this species, but the two forms appear to be perfectly distinct and to occupy different geographical ranges. In *M. nigra* the *adult male* has the entire plumage black, with the exception of the lesser and median wing-coverts, which are pure white. The *adult female* is entirely dark brown or, in worn examples, rusty brown.

Hab. From the Congo to Benguella, eastwards to Lake Albert, Unyoro, and Uganda and southwards to Kasongo on the Upper Congo.

The synonymy of *Myrmecocichla arnotti* (Tristr.) should stand as follows:—

Saxicola arnotti Tristram, Ibis, 1869, p. 206, pl. vi. [immature male]; Finsch, Notes Leyd. Mus. xxii. p. 159 (1900).

Saxicola shelleyi Sharpe, ed. Layard, Birds S. Afr. p. 246 (1876) [adult male and female].

Myrmecocichla leucolæma Reich. Orn. Centr. 1880, p. 181 [adult female].

Myrmecocichla collaris Reich. J. f. O. 1882, p. 212 [immature male].

Adult male. Similar to *M. nigra*, but the crown of the head is pure white, and the greater (as well as the lesser and median) wing-coverts are white, tipped with black.

Adult female. Like the male, but differs in having the crown and mantle black washed with brownish; the chin, throat, and middle of the chest white, and most of the feathers more or less fringed with smoky black.

Hab. From Lake Mweru and Ugogo southwards along the Zambesi to Zoutpansberg and Griqualand East.

PRATINCOLA RUBICOLA (Linn.).

Pratincola rubicola Reich. iii. p. 732 (1905).

No. 5042. *a.* ♀. Mfumbiro Volcanoes, 5000 ft., 21st Nov.

Iris dark hazel; bill and feet black.

NEOCOSSYPHUS PRÆPECTORALIS Jackson.

Neocossyphus præpectoralis Jackson, Bull. B. O. C. xvi. p. 90 (1906).

No. 5194. *a.* ♀. Below Kasongo, Upper Congo, 2000 ft., 10th Feb.

Iris dark hazel; bill black; feet pale flesh-colour.

The specimen procured by Mr. Carruthers near Kasongo differs somewhat from a typical female example of *N. præpectoralis*, obtained by the Ruwenzori Expedition in the Mpanga Forest, in being somewhat smaller (wing 3·95 inches, tail 3·35; as compared with wing 4·2, tail 3·5) and in having the white tips of the outer tail-feathers shorter. As in *N. præpectoralis*, the white at the end of the outer pair of tail-feathers is entirely confined to the terminal part of the inner web and tip of the feather. In the present specimen the white portion of the inner web measures 0·9 inch, while in the typical female from the Mpanga Forest it measures 1·4 inch and in the type specimen—a male from Toro—it measures 1·45. The present specimen is in much worn plumage, but may represent a distinct and rather smaller form of *N. præpectoralis*.

CICHLADUSA ARCUATA Peters.

Cichladusa arquata Reich. iii. p. 765 (1905).

Nos. 5147, 5154. *a, b.* ♂. East of Kasongo, Upper Congo, 2000–2500 ft., 8th & 11th Jan.

Iris very pale yellow; bill black; feet grey.

Both examples of the Morning Warbler appear to be a trifle smaller than birds from the Zambesi and Nyasaland, but one specimen in the British Museum from the latter locality has the same wing-measurement, 3·4 inches.

TURDINUS ATRICEPS Sharpe.

Turdinus atriceps Sharpe, Bull. B. O. C. xiii. p. 10 (1902); Reich. iii. p. 740 (1905).

No. 5048. *a.* ♀. Mfumbiro Volcanoes, 7000 ft., 24th Nov.

Iris dark hazel; upper mandible black, lower mandible grey; feet grey.

The female procured on Mfumbiro is in somewhat worn and faded plumage. I have compared it with a large series of twenty specimens (including the type) from Ruwenzori, killed in January, February, and March, and it agrees very closely with a female procured on the 9th of January. With the exception of the latter specimen, all the Ruwenzori birds are in rather fresher and brighter plumage.

[This species was found on the volcanoes, where the vegetation was similar to that met with on Ruwenzori at 8000 ft.—D. C.]

CRATEROPUS TANGANJICÆ Reichenow.

Crateropus tanganjicæ Reich. iii. p. 663 (1905).

No. 5110. *a.* ♀. North-west of Lake Tanganyika, 2800 ft., 29th Dec.

Iris orange; bill black; feet grey.

CRATEROPUS CARRUTHERSI Grant.

Crateropus tanganjicæ Shelley (*nec* Reich.), Ibis, 1901, pp. 165, 170.

Crateropus carruthersi Grant, Bull. B. O. C. xix. p. 106 (1907).

No. 5150. *a.* ♂. East of Kasongo, Upper Congo, 2500 ft., 8th Jan. (*Type of the species.*)

Iris orange; bill black; feet brown.

This Babbling-Thrush is most nearly allied to *C. tanganjicæ* Reich., but the feathers of the nape and upper mantle are uniform reddish-brown without dark middles, there are no distinct narrow dusky cross-bars on the feathers of the back, and only the chin is black. In *C. tanganjicæ* the black extends over the whole throat, and only the sharp-pointed tips of the feathers are white. The wing measures 4·1 inches, the tail 4·3, and the tarsus 1·4.

There is a second example of this species in the British Museum. It is also a male and was sent from Mambwe, immediately to the south of Lake Tanganyika, by Sir Alfred Sharpe.

CRATEROPUS HARTLAUBI Bocage.

Crateropus hartlaubi Reich. iii. p. 663 (1905).

Nos. 5108, 5109, 5117. *a–c.* ♂ ♀. North-west of Lake Tanganyika, 2800 ft., 29th Jan. & 18th Feb.

Iris red; bill black; feet grey.

The examples of Hartlaub's Babbling-Thrush are in nearly freshly moulted plumage, the new feathers of the head and mantle being distinctly margined with greyish-white, while the shaft-stripes to the feathers of the throat, fore-neck, and breast are conspicuous and of a dark brown.

IXONOTUS GUTTATUS Verr.

Ixonotus guttatus Reich. iii. p. 416 (1904).

Nos. 5197, 5216, 5217. *a–c.* ♂. Near Ponthierville, Upper Congo, 2000 ft.

Iris dark hazel; upper mandible black, lower mandible grey; feet blue-grey.

A male of this Bulbul was procured by the Ruwenzori Expedition at Mawambi, in the Eastern Congo forest. So far as I am aware, this species has hitherto only been recorded from West Africa, its known range extending from Senegambia to Loango.

[This Bulbul is always to be found in large flocks in the forest.—D. C.]

XENOCICHLA LEUCOLÆMA Sharpe.

Xenocichla leucolæma Sharpe, Bull. B. O. C. xiii. p. 10 (1902).

Phyllastrephus albigularis Reich. iii. p. 400 (1904) [part.].

Bleda albigularis Sharpe, Ibis, 1907, p. 459 (*nec ex* Nyasaland = *X. flavostriata* Sharpe).

No. 5196. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 10th Feb.

Iris pale brown; upper mandible black, lower mandible grey.

The male specimen from the River Ja, Camaroon, referred by Dr. Sharpe (*op. cit.*) to *Xenocichla albigularis* Sharpe, from Fantee, is certainly identical with the type of *X. leucolæma* from Toro. Dr. Reichenow unites *X. leucolæma* with *X. albigularis*, and states that the great difference in size is due to sex. The type of *X. albigularis* from Fantee is, however, so very small that I think this conclusion requires further confirmation.

X. albigularis Sharpe.

	Wing. in.	Tail. in.	
Type : (sex unknown).	2·7	2·5	Fantee.

X. leucolæma Sharpe.

		Wing. in.	Tail. in.	
Type :	♂ ..	3·4	3·0	Toro.
	♂ ..	3·1	2·9	Fort Beni
	♂ ..	3·35	2·9	Kasongo.
	♂ ..	3·4	3·1	Camaroon.

Andropadus gracilirostris Strickl.

Andropadus gracilirostris Reich. iii. p. 411 (1904).

No. 5248. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Iris reddish-brown ; bill and feet black.

A fine male of this Bulbul in freshly moulted plumage.

Andropadus gracilis Cab.

Andropadus gracilis Reich. iii. p. 414 (1904).

Ardropadus (sic) *kagerensis* Reich. Orn. Monatsb. xvi. no. 3, p. 47 (1908) [Immature].

Nos. 5182, 5230, 5235, 5236. *a–d.* ♂ ♀. Near Ponthierville, Upper Congo, 2000 ft., 8th–21st Feb.

Iris hazel ; bill black ; feet dark grey or olive.

This species may be distinguished from the allied *A. curvirostris* Cass. by its shorter *black* bill, generally greyer throat contrasting with the breast, somewhat shorter wing, and considerably shorter tail.

	Wing. in.	Tail. in.
A. gracilis, ♂	2·8 –3·0	2·45–2·6
♀	2·7 –2·9	2·4 –2·5
A. curvirostris, ♂	3·0 –3·2	2·7 –3·0
♀	2·95–3·15	2·6 –3·0

In *A. curvirostris* the bill is not only considerably longer, but paler (in dry skins at least) towards the extremity.

Dr. Reichenow has recently described the immature example of *A. gracilis* under the above-given name.

ANDROPADUS LATIROSTRIS Strickl.

Andropadus latirostris Reich. iii. p. 414 (1904).

Andropadus latirostris eugenius, Reich. iii. p. 415 (1904).

No. 5131. *a.* ♂. North-west of Lake Tanganyika, 4000 ft., 3rd Jan.

Iris dark hazel ; bill black ; feet yellow or dark grey.

Dr. Reichenow has separated East-African examples of *A. latirostris* Strickl. under the name of *A. eugenius,* but a large series of specimens collected by the Ruwenzori Expedition shews that the differences that he mentions cannot be relied on. A series of birds from Fernando Po does not differ from East-African examples.

CRINIGER CALURUS Cass.

Criniger calurus Reich. iii. p. 382 (1904).

Nos. 5176, 5177, 5191, 5192, 5195. *a–e.* ♂ ♀. Below Kasongo, Upper Congo, 2000 ft., 7th–10th Feb.

Iris dark red ; upper mandible black, lower mandible grey ; feet grey.

The occurrence of this Bulbul at Kasongo is worthy of note.

CRINIGER ICTERINA Bonap.

Phyllastrephus icterinus Reich. iii. p. 402 (1904).

No. 5175. ♂. Below Kasongo, Upper Congo, 2000 ft., 7th Feb.

Iris hazel ; upper mandible black, lower mandible grey.

CAMPOPHAGA NIGRA Vieill.

Campephaga nigra Reich. ii. p. 518 (1903).

No. 5004. *a.* ♀. South-west Uganda, 4000 ft., 26th Sept.

Iris dark hazel ; bill and feet black.

A freshly moulted female example of the Black Cuckoo-

Shrike has the crown and entire back unusually grey, with only a faint olive wash on some of the feathers.

STIZORHINA VULPINA Reichenow.

Stizorhina vulpina Reich. ii. p. 467 (1903).

No. 5208. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 18th Feb.

Iris dark brown; bill black; feet brown.

STIZORHINA FRASERI (Strickl.).

Stizorhina fraseri Reich. ii. p. 466 (1903).

No. 5174. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 7th Feb.

Iris dark hazel; bill black; feet brown.

Besides having the middle pair of tail-feathers more olive-brown and much less rufous than in *S. vulpina* Reich., the present species has the inner web of the fourth pair of tail-feathers black almost to the tip and that of the fifth (penultimate) pair black on the basal half. In *S. vulpina* the fourth pair of tail-feathers have only the basal portion of the inner web next to the shaft blackish, while the two outer pairs are uniform pale chestnut-red. It will thus be seen that the ranges of the West-African *S. fraseri* and of the East Central African *S. vulpina* overlap on the Upper Congo.

Whether the genus *Stizorhina* is really distinct from *Neocossyphus* requires careful consideration, *S. finschi* (Sharpe) and *N. præpectoralis* Sharpe being almost alike in plumage and differing chiefly in the shape of the bill, which is stouter and more flattened in the former.

BRADYORNIS MURINUS Finsch & Hartl.

Bradornis pallidus murinus Reich. ii. p. 436 (1903).

Nos. 5094, 5095. *a, b.* ♂ ♀. North of Lake Tanganyika, 3000 ft., 19th Dec.

No. 5119. *c.* ♂. North-west of Lake Tanganyika, 3000 ft., 2nd Jan.

Iris dark hazel; bill and feet black.

One male (5119) is rather larger and has the back somewhat greyer than the other male (5094).

The measurements are as follows:—

	Wing. in.	Tail. in.
♂ (5119)	3·9	3·2
♂ (5094)	3·75	2·9
♀ (5095)	3·55	2·8

Bias musicus Vieill.

Bias musicus Reich. ii. p. 469 (1903).

No. 5172. *a.* ♀. Below Kasongo, Upper Congo, 2000 ft., 6th Feb.

Nos. 5213, 5225, 5226. *b–d.* ♂ ♀. Ponthierville, Upper Congo, 2000 ft., 19th & 20th Feb.

♂. Iris yellow; bill black; feet yellow.

♀. Iris yellow or pale yellow; bill black; feet pale grey or pale yellow.

[The Black-and-White Flycatcher haunts the tree-tops in thick forest, and sings on the wing like a Tree-Pipit.—D. C.]

Mr. Carruthers's remarks about the musical powers of this species are opposed to the observations of Dr. G. A. Fischer [*cf.* Stark & Scl. B. S. Afr. ii. p. 251 (1901)].

Diaphorophyia castanea (Fraser).

Diaphorophyia castanea Reich. ii. p. 490 (1903).

No. 5166, 5181, 5190. *a–c.* ♂. Below Kasongo, Upper Congo, 2000 ft., 4th–9th Feb.

Nos. 5227. *d.* ♀ imm. Ponthierville, Upper Congo, 2000 ft., 20th Feb.

Iris dark red or hazel; eyelid dark red; bill black; feet dark red.

Batis molitor (Hahn & Küst.).

Batis molitor Reich. ii. p. 482 (1903).

Nos. 5122, 5123. *a, b.* ♂ ♀. North-west of Lake Tanganyika, 3000 ft., 2nd Jan.

Iris greenish-yellow; bill and feet black.

Mr. Carruthers notes that these White-flanked Flycatchers were evidently a pair, as they were shot in company with one another.

The East-African examples of this species have been separated under the name of *B. puella* Reich., chiefly on account of the darker chestnut-colour of the throat-patch and breast-band in the female. The female specimen from Tanganyika resembles typical examples of the somewhat paler *B. molitor* from South Africa. The males shew no constant difference in plumage, the extent of the white eyebrow-stripe being a purely individual character.

CHLOROPETA MASSAICA Fisch. & Reichenow.

Chloropeta natalensis massaica Reich. ii. p. 465 (1903).

Chloropeta massaica Grant, Bull. B. O. C. xix. p. 32 (1906).

No. 5059. *a.* ♂. Lake Kivu, 4900 ft., 30th Nov.

The Masai Yellow Flycatcher has the iris dark hazel, the upper mandible black, the lower mandible brown, and the feet black.

PARISOMA PLUMBEUM (Hartl.).

Parisoma plumbeum Reich. iii. p. 521 (1905).

No. 5240. *a.* ♀ imm. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Iris dark hazel; bill brown; feet dark grey.

Apparently an immature female of Hartlaub's Tit-Warbler. It differs from the adult in having the upperparts washed with brownish; the wing-coverts, scapulars, and innermost secondaries rather widely margined with pale rufous-buff; the underparts, with the exception of the middle of the belly, which is whitish, strongly washed with pale rufous; the vent and under tail-coverts clear pale rufous, and the penultimate pair of tail-feathers with the *terminal two-thirds white.*

P. orientale Reich. & Neum., from Kibuesi, is a closely-allied form, but is easily distinguished by having the under tail-coverts pure white instead of buff or pale rufous.

TARSIGER RUWENZORII Grant.

Tarsiger ruwenzorii Grant, Bull. B. O. C. xix. p. 33 (1906).

Tarsiger eurydesmus Reich. Orn. Monatsb. xvi. no. 3, p. 48 (1908).

No. 5050. *a.* ♂. Mfumbiro Volcanoes, 7000 ft., 24th Nov.

Iris dark brown; bill black; feet dark brown.

This species is most nearly allied to *T. johnstoni* (Shelley), which it resembles in having the outer webs of the secondary quills margined with olive; but it is easily distinguished by the conspicuous orange-yellow rump and upper tail-coverts and by having the yellow on the second pair of tail-feathers confined to the basal half of the outer web, and the outer pairs widely tipped with black, about 0·7 inch wide.

A large series of this handsome Bush-Robin was procured by the Ruwenzori Expedition, and the male obtained by Mr. Carruthers differs in no way from the type specimen. The male has the wing 3·2 inches, tail 2·7, tarsus 1·0; the female, wing 2·9–3·0, tail 2·4, tarsus 0·95.

Dr. Reichenow has recently re-described this species under the above-given name.

MUSCICAPA BREVICAUDA Grant.

Muscicapa lugens Shelley (nec Hartl.), Ibis, 1890, p. 158.

Muscicapa brevicauda Grant, Bull. B. O. C. xix. p. 107 (1907).

No. 5232. *a.* ♀. Upper Congo, 2000 ft., 21st Feb. (*Type of the species.*)

Iris dark hazel; upper mandible black, lower mandible grey; feet grey.

This Grey Flycatcher is very similar to *M. cærulescens* (Hartl.), but is easily recognised by its smaller size and very much shorter tail. From *M. lugens* (Hartl.), which it resembles in having the chest and breast darker grey, it is distinguished by possessing a white band extending from the lores over the eye and white under wing-coverts. Wing 2·65 inches; tail 1·8; tarsus 0·6.

There is a second example of this species in the British Museum, which was procured at Yambuya, on the Aruwimi River, Upper Congo, by the late Mr. J. S. Jameson, and was incorrectly identified with *M. lugens* (vide supra).

HIRUNDO ANGOLENSIS Bocage.

Hirundo angolensis Reich. ii. p. 409 (1903).

Nos. 5155, 5156. *a, b.* [♂] ♀. East of Kasongo, Upper Congo, 2300 ft., 17th Jan.

Iris dark hazel; bill and feet black.

HIRUNDO MONTEIRI Hartl.

Hirundo monteiri Reich. ii. p. 416 (1903).

No. 5141. *a.* ♂. East of Kasongo, Upper Congo, 3000 ft., 7th Jan.

Iris dark brown; bill black; feet brown.

CAMPOTHERA PERMISTA Reich.

Dendromus permistus (Reich.) ii. p. 170 (1902).

No. 5224. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 20th Feb.

Iris dark hazel; upper mandible black, lower mandible olive-green.

DENDROPICUS LAFRESNAYI Malh.

Dendropicos lafresnayi Reich. ii. p. 195 (1902) [part.].

Dendropicus lafresnayi Grant, Ibis, 1905, p. 211.

No. 5074. *a.* [♂]. Island of Kidjwe, Lake Kivu, 4900 ft., 10th Dec.

Iris dark red; bill black; feet dark olive.

A freshly-moulted example of Lafresnay's Woodpecker has the upperparts dull golden-olive and the underparts washed with greenish-yellow.

MESOPICUS XANTHOLOPHUS (Hargitt).

Mesopicos xantholophus Reich. ii. p. 188 (1902).

No. 5231. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 21st Feb.

Iris dark hazel; upper mandible black, lower mandible pale grey; feet dark grey.

INDICATOR VARIEGATUS Less.

Indicator variegatus Reich. ii. p. 108 (1902).

No. 5009. *a.* ♂ vix ad. South-west Uganda, 4000 ft., 29th Sept.

Iris dark hazel; bill dark horn-colour; feet dark greyish-green.

In this example of the Variegated Honey-Guide the markings on the throat, fore-neck, and chest take the form of spots rather than streaks, each feather being black margined all round with white. Apparently individuals with the throat &c. streaked are in fully adult plumage, while those with the throat &c. spotted are in immature plumage.

BARBATULA FLAVISQUAMATA (Verr.).

Barbatula flavisquamata Sharpe, Ibis, 1904, p. 618.

Barbatula scolopacea consobrina Reich. ii. p. 145 (1902).

No. 5193. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 10th Feb.

Iris very pale yellow; bill and feet black.

This small Barbet from Kasongo is perfectly similar to typical examples of *B. flavisquamata* from Gaboon and Camaroon.

The differences between this species and *B. stellata* (Jard. & Fras.) have already been briefly noticed by Dr. Sharpe (*op. cit.*). The latter species, found in Fernando Po, is a larger bird and, in addition to its duller plumage, has the forehead sooty-brown without pale yellow tips to the feathers, and the bill proportionately very much longer and stouter. The culmen measures 0·68–0·72 inch, as compared with 0·56–0·58 in *B. flavisquamata.*

B. consobrina (Reich.) is apparently synonymous with *B. flavisquamata* (Verr.), of which Mr. Carruthers's bird is no doubt a typical example.

BARBATULA EXTONI Layard.

Barbatula extoni Reich. ii. p. 150 (1902).

No. 5126. *a.* ♂. North-west of Lake Tanganyika, 4000 ft., 3rd Jan.

Iris dark hazel; bill and feet black.

This specimen differs from typical examples of *B. centralis* Reich. from Ndussuma, Lake Albert, in having the pale lemon-yellow chin and throat contrasting with the breast, which is washed with ochre, and the inner wing-coverts margined with bright golden-yellow. In both these characters the Tanganyika bird most nearly resembles *B. extoni* Layard, and though the breast is rather brighter and yellower than in any of the examples in the British Museum, I have, for the present, referred it to that species. *B. extoni* is known to range from S. Africa northwards to Nyasaland and Angola.

BARBATULA LEUCOLÆMA Verr.

Barbatula leucolaima Reich. ii. p. 147 (1902).

No. 5185. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 10th Feb.

Iris dark hazel; bill black; feet dark grey.

In a large series of West-African examples of this Barbet in the British Museum the measurement of the wing varies from 2·0–2·1 inches. In the bird from Kasongo the wing measures 2·05 inches.

BARBATULA MFUMBIRI Grant.

Barbatula mfumbiri Grant, Bull. B. O. C. xix. p. 107 (1907).

No. 5056. *a.* ♂. Mfumbiro Volcanoes, 6000 ft., 26th Nov. (*Type of the species.*)

Iris dark hazel; bill and feet black.

This Barbet is most nearly allied to *B. leucolæma* Verr., but is larger; the chest is greyish-white instead of white, and the rest of the underparts are duller and of a more greenish-yellow colour. As regards the coloration of the underparts, it closely resembles *B. jacksoni* Sharpe; but the rump is pale sulphur-yellow, as in *B. leucolæma*, and not bright chrome-yellow. The measurements are:—culmen 0·5 inch; wing 2·3; tail 1·13; tarsus 0·6.

In eleven examples of this species from Ruwenzori the measurements are as follows:— 4 ♂, wing 2·15–2·3 inches; 7 ♀, wing 2·18–2·3.

LYBIUS IRRORATUS (Cab.).

Lybius torquatus irroratus Reich. ii. p. 126 (1902).

No. 5145. *a.* ♂. East of Kasongo, Upper Congo, 2500 ft., 8th Jan.

Iris brown; bill and feet black.

The bird obtained by Mr. Carruthers has a wing-measurement of 87 mm., and apparently belongs to this smaller form of the Black-collared Barbet (*L. torquatus* Dumont) and not to *L. congicus* Reich., if the latter is really separable from *L. irroratus*.

GYMNOSCHIZORHIS LEOPOLDI (Shelley).

Gymnoschizorhis leopoldi Reich. ii. p. 37 (1902).

No. 5012. *a.* ♂. South-west Uganda, 4000 ft., 29th Sept.

Iris dark grey; bare skin of the face and throat black; bill and feet black.

[King Leopold's Touraco was met with in great numbers in South-west Uganda, but was not seen in other parts of that Protectorate.—D. C.]

MUSOPHAGA ROSSÆ Gould.

Musophaga rossæ Reich. ii. p. 29 (1902).

Nos. 5073, 5075, 5076. *a–c.* ♂ ♀. Island of Kidjwe, Lake Kivu, 4900 ft., 10th & 11th Dec.

Iris dark hazel, bare skin round the eyes yellow; upper mandible yellow, orange at the base; lower mandible red, yellow at the tip; feet black.

CEUTHMOCHARES AËREUS (Vieill.).

Ceuthmochares æreus Reich. ii. p. 73 (1902).

No. 5244. *a.* ♀. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Iris reddish-brown; bill yellow; bare skin on the face pale blue; feet black.

Dr. Reichenow distinguishes the examples of this Cuckoo which occur between Niam-Niam and Lake Victoria under the name *C. intermedius* Sharpe; but I agree with Captain Shelley [Cat. Birds B. M. xix. p. 402 (1891)] in regarding them as inseparable from typical *C. aëreus*, which was first procured at Malimbe, at the mouth of the Congo.

CUCULUS SOLITARIUS Steph.

Cuculus solitarius Reich. ii. p. 87 (1902).

No. 5130. *a.* ♂. North-west of Lake Tanganyika, 4000 ft., 3rd Jan.

Iris dark hazel; bill black, yellow at the base; feet yellow.

HAPALODERMA NARINA (Steph.).

Apaloderma narina Reich. ii. p. 212 (1902).

No. 5245. *a.* ♂. Ponthierville, Upper Congo, 2000 ft., 22nd Feb.

Iris dark hazel; bill pale green, yellow at the base; throat mauve, bare skin green; feet flesh-colour.

Cypselus æquatorialis v. Müll.

Cypselus æquatorialis Grant & Reid, Ibis, 1901, p. 671.

Apus æquatorialis Reich. ii. p. 379 (1902).

? *Apus reichenowi* Neumann, Bull. B. O. C. xxi. no. cxi. p. 57 (1908).

No. 5106. *a.* ♀. North-west of Lake Tanganyika, 2800 ft., 28th Dec.

Iris dark hazel; bill and feet black.

This specimen is of great interest. The breast and belly are in worn rusty plumage and of a nearly uniform sooty-brown colour, with scarcely a trace of the white margin and black subterminal band characteristic of each feather of the underparts in freshly moulted examples of *C. æquatorialis.* Among the worn plumage, however, numerous new feathers, with the blackish subterminal band and distinct white tip, are making their appearance.

Professor Neumann has recently described as new, under the name of *Apus reichenowi,* a Swift which must closely resemble this worn specimen of *C. æquatorialis,* and may prove to be a faded example of that species. It is said to have the underparts, below the white throat, uniform sooty-brown, and to live "side by side with *A. æquatorialis* and other Swifts" which inhabit the mountains of Masailand.

Cypselus streubeli Hartl.

Apus streubeli Reich. ii. p. 381 (1902).

No. 5005. *a.* ♂. South-west Uganda, 4000 ft., 26th Sept.

Iris dark brown; bill black; feet brown.

This specimen belongs to the smaller race of *C. caffer* Licht. The wing measures 5·35 inches (=137 mm.).

Mr. Carruthers found the species breeding.

Lophoceros fasciatus (Shaw).

Lophoceros fasciatus Reich. ii. p. 248 (1902).

No. 5202. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 12th Feb.

Iris dark brown; bill red and pale yellow; feet dark brown.

BYCANISTES SHARPEI Elliot.

Bycanistes sharpei Reich. ii. p. 245 (1902).

No. 5178. *a.* ♂ imm. Below Kasongo, Upper Congo, 2000 ft., 7th Feb.

Nos. 5220, 5237. *b, c.* [♀] et ♂ imm. Ponthierville, Upper Congo, 2000 ft., 19th & 21st Feb.

Adult. Iris dark hazel; bill pale yellow; feet black.

Immature. Iris dark hazel; bill greyish-green; feet grey.

The type specimen of *B. sharpei* procured by Hamilton in Angola is no doubt an immature male, having the larger bill and large black patch on the basal part of the upper and lower mandibles characteristic of that sex, while the casque is scarcely developed. It agrees almost exactly with a male procured near Efulen, Camaroon, by Mr. G. L. Bates, but has a varying amount of black at the base of the four outermost pairs of tail-feathers, while in the Efulen bird, which is probably somewhat older, these are almost pure white. A second male from the River Ja, Camaroon, also procured by Mr. Bates (*cf.* Sharpe, 'Ibis,' 1904, p. 609), has the bill similarly coloured, but appears to be a fully adult bird with a well-developed casque terminating abruptly near the point of the culmen.

The bill of the adult female is much smaller than that of the adult male, and is pale yellow without any black patches at the base; the casque also is much less developed.

Bill (measured from gape to tip) in adult male 4·0 inches; casque 3·7.

Bill (measured from gape to tip) in adult female 3·3 inches; casque 2·6.

Fully adult birds of both sexes have the four outer pairs of tail-feathers pure white, or with only slight traces of black at the extreme base of some of the feathers.

CORACIAS CAUDATUS Linn.

Coracias caudatus Reich. ii. p. 223 (1902).

No. 5151. *a.* ♀. East of Kasongo, Upper Congo, 2500 ft., 9th Jan.

Iris pale brown; bill black; feet dirty yellow.

HALCYON CHELICUTENSIS (Stanley).

Halcyon chelicuti Reich. ii. p. 271 (1902).

No. 5121. *a.* ♀. North-west of Lake Tanganyika, 3000 ft., 2nd Jan.

Iris dark brown; bill black, lower mandible red; feet dark red.

MYIOCEYX RUFICEPS (Hartl.).

Myioceyx ruficeps Reich. ii. p. 289 (1902).

No. 5229. *a.* ♀. Ponthierville, Upper Congo, 2000 ft., 20th Feb.

Iris dark hazel; bill and feet red.

The occurrence of this beautiful little Kingfisher on the Upper Congo is worthy of note. It has recently been procured in Camaroon by Mr. W. L. Bates's collectors; and Dr. Sharpe (*cf.* 'Ibis,' 1904, p. 607) expresses the opinion that *M. lecontei* from Gaboon will probably prove to be the young of *M. ruficeps*.

CERYLE MAXIMA (Pall.).

Ceryle maxima Reich. ii. p. 298 (1902).

Nos. 5107, 5114. *a, b.* ♀. North-west of Lake Tanganyika, 2800 ft., 28th Dec.

Iris dark hazel; bill and feet black.

GLAUCIDIUM PERLATUM (Vieill.).

Glaucidium perlatum Reich. i. p. 674 (1901).

No. 5115. *a.* ♀. North-west of Lake Tanganyika, 2800 ft., 1st Jan.

Iris pale yellow; cere black; bill pale greenish-yellow; feet brown, soles yellow, claws black.

BUTEO AUGUR Rüpp.

Buteo augur Reich. i. p. 592 (1901).

No. 5043. *a.* ♀. Mfumbiro Volcanoes, 5000 ft., 21st Nov.

Iris brown; cere yellow; bill black, blue at the base; feet yellow.

SCOPUS UMBRETTA Gmel.

Scopus umbretta Reich. i. p. 353 (1901).

No. 5019. *a.* ♀. Lake Albert Edward, 3100 ft., 22nd Oct.

Iris dark hazel; bill and feet black.

[The Hammer-head was very common and breeding.—D. C.]

HYDROCHELIDON NIGRA (Linn.).

Hydrochelidon nigra Reich. i. p. 70 (1900).

No. 5055. *a.* ♂. Mfumbiro Volcanoes, 5000 ft., 25th Nov.

Iris dark hazel; bill black; feet red.

[Large flocks of the Black Tern were seen on the cultivated land north of Lake Kivu.—D. C.]

CREX CREX (Linn.).

Crex crex Reich. i. p. 277 (1900).

No. 5081. *a.* ♂. Lake Kivu, 4900 ft., 15th Dec.

Iris dark brown; bill and feet brown.

TURTUR SENEGALENSIS (Linn.).

Turtur senegalensis Reich. i. p. 406 (1901).

No. 5116. *a.* ♀. North-west of Lake Tanganyika, 2800 ft., 1st Jan.

Iris dark hazel; bill black; feet red.

VINAGO CALVA (Temm.).

Vinago calva Reich. i. p. 394 (1901).

No. 5183. *a.* ♂. Below Kasongo, Upper Congo, 2000 ft., 8th Feb.

Iris blue; frontal knob and base of bill scarlet, tip pale grey; feet yellow, claws pale grey.

VINAGO NUDIROSTRIS Swains.

Vinago calva nudirostris Reich. i. p. 396 (1901).

Nos. 5001, 5002. *a, b.* ♀. West coast of Lake Victoria, 4000 ft., 22nd Sept.

Iris grey; bill scarlet, white at the tip; feet scarlet.

[This Green Pigeon was found in very large flocks in open bush-country.—D. C.]

PTERNISTES CRANCHI (Leach).

Pternistes cranchi Reich. i. p. 457 (1901).

No. 5105. *a.* ♂. North-west of Lake Tanganyika, 2800 ft., 28th Dec.

Iris dark hazel; bare skin on throat red; bill and feet red.

[Cranch's Bare-throated Francolin was found in great numbers in long grass and among thick bush.—D. C.]

FRANCOLINUS COQUI (Smith).

Francolinus coqui Reich. i. p. 492 (1901).

Nos. 5013, 5014. *a, b.* ♂. S.W. Uganda, 4800 ft., 1st & 3rd Oct.

Iris reddish-brown; bill black, yellow at the base; feet yellow.

XI.—*On further Collections of Birds from the Efulen District of Camaroon, West Africa.* By R. BOWDLER SHARPE, LL.D. *With Notes by the Collector,* G. L. BATES.—Part VI.*

(Plate VII.)

WITH this paper I conclude my account of Mr. Bates's collections received up to the end of 1907. He has recently sent some more consignments which I hope to be able to describe shortly.

As before, Mr. Bates's interesting notes on habits are enclosed in square brackets [ ].

CISTICOLA ERYTHROPS.

Cisticola erythrops (Hartl.); Sharpe, Cat. B. Brit. Mus. vii. p. 250; id. Hand-l. B. iv. p. 196; Reichenow, Vög. Afrikas, iii. p. 568 (1905).

No. 170. ♂ ad. Efulen, June 1, 1903. "Abankwat."
No. 593. ♀ ad. River Ja, May 27, 1904. Eggs forming.
Nos. 637, 638. ♂; 684. ♀. River Ja, June 6, 1904.
Nos. 838, 841. ♂ ad. Efulen, July 3, 4, 1905.
No. 1008. Ad. Efulen, Aug. 5, 1905.
No. 1179. ♀ ad. River Ja, Dec. 22, 1905.
Nos. 1255, 1311, 1330. ♂ ♀. River Ja, Jan. 6–18, 1906.
Nos. 1483, 1508. ♀ ad. River Ja, March 1, 1906.

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* *Cf.* Sharpe, above, pp. 117–129.

Nos. 1778, 1891. ♀ ad. June 19, Aug. 7, 1906.

Nos. 1997. ♂ ad.; 2022. Nestling. Bitje, River Ja, Oct. 25, 29, 1906.

No. 2117. ♀ ad. Bitje, River Ja, Dec. 5, 1906.

Nos. 2335, 2357, 2369, 2463, 2500. ♀ ad.; 2429, 2444. ♂ ad. et juv. Bitje, River Ja, March 12 to May 7, 1907.

Nos. 2429. ♂ juv.; 2444, 2463. ♂ ♀ ad. Bitje, April 8–15, 1907.

[This is the commonest, or at least the most often seen, of the many species of Warblers that inhabit the grass and bushes of the old cleared land, but not the forest. It is fond of perching on the top of a bush or banana-leaf and uttering, in its clear incisive tone, the notes imitated in the native name "abankwat," with the emphasis on the "kwat." It has also a little chattering song, quite different from the sharp call just described.—G. L. B.]

CISTICOLA RUFIPILEATA.

Cisticola rufipileata Sharpe, Ibis, 1902, p. 95; Reichenow, Vög. Afrikas, iii. p. 561 (1905).

a. ♂ ad. Efulen, Feb. 28, 1902. "Abankwat."

b. ♂ ad. „ June 19, 1902.

Nos. 199, 200. ♂ ♀ ad. Efulen, Oct. 10, 12, 1903.

Nos. 369, 370. ♂ ♀ ad. „ March 2, 1904.

Nos. 416, 431. ♂ ad. „ April 1, 6, 1904.

CALAMOCICHLA POENSIS.

Calamocichla poensis Alexander, Bull. B. O. C. xiii. p. 37 (1903); id. Ibis, 1903, p. 108; Reichenow, Vög. Afrikas, iii. p. 576.

Calamocichla plebeia Reichenow, t. c. p. 575.

Nos. 1614, 1635. ♂ ad. River Ja, March 27–30, 1906. Testes very large. [Wing 3·0–3·05 inches.]

No. 2389. ♀ ad. Bitje, River Ja, March 28, 1907. [Wing 2·8.]

No. 1792. ♂ juv. River Ja, June 23, 1906. Testes of medium size. [Wing 2·9.]

No. 2308. ♂ juv. Bitje, River Ja, March 4, 1907. Testes small. [Wing 2·9.]

I consider that the last two specimens, which are much more rufescent in tone and have the sides of the body with the flanks, thighs, and under tail-coverts inclining to fawn-colour, are young birds. They agree with the description of Dr. Reichenow's *Calamocichla plebeia* (l. c.), and this I believe to be the young of *Calamocichla poensis,* from which I am unable to separate the adult birds found on the River Ja.

As will be seen above, the wings of the Camaroon birds measure 2·9–3·05 inches, the female 2·8. A Fernando Po bird obtained by Mr. Seimund has the wing 3·0.

SYLVIA SIMPLEX.

Sylvia simplex Lath. ; Sharpe, Hand-l. B. iv. p. 209 ; Reichen. Vög. Afrikas, iii. p. 649.

a. ♂ ad. Efulen, Dec. 23, 1902.

No. 1622. ♂ ad. River Ja, March 28, 1906.

PHYLLOSCOPUS SIBILATOR.

Phylloscopus sibilator (Bechst.) ; Sharpe, Hand-l. B. iv. p. 212 ; Reichenow, Vög. Afrikas, iii. p. 645.

Nos. 1577, 1606. ♀ ad. River Ja, March 21–26, 1906.

Nos. 2159. ♂ ad. ; 2339, 2340. ♀ ; 2345, 2367. ♂. Bitje, River Ja, Jan. 14 to March 21, 1907.

It is very interesting to see such a large series of our Willow-Warbler from Camaroon.

SYLVIELLA BATESI, sp. n.

Similis *S. flaviventri*, sed gastræo pallidiore, sulphureo-flavo, linea superciliari albida obsoleta distinguenda. Long. tot. 3·25 poll., culmen 0·45, alæ 1·95, caudæ 0·75, tarsi 0·6.

Nos. 2089–2090. ♂ ♀. Bitje, River Ja, Oct. and Nov. 1906.

The colour of the under surface distinguishes the Camaroon bird from its representative on the Gold Coast, the belly being of a pale sulphur-yellow, much paler than the bright yellow of *S. flaviventris.* The fore-neck and chest are greenish grey not olive-yellowish as in *S. flaviventris.*

SYLVIELLA VIRENS.

Sylviella virens Sharpe, Hand-l. B. iv. p. 228.

Sylvietta virens Reichenow, Vög. Afrikas, iii. p. 631.

a. ♂ ad. Efulen, April 19, 1902.
No. 80. ♀ ad. River Ja, Feb. 1903.
No. 242. ♂. Efulen, Nov. 18, 1903.
No. 799. ♀ ad. Efulen, June 17, 1905. [Wing 1·85.]
No. 1262. ♂ ad. River Ja, Jan. 7, 1906. [Wing 2·0.]
No. 2461. ♀ ad. Bitje, River Ja, April 15, 1907. [Wing 1·9.]

The males seem to be rather larger than the females.

APALIS BINOTATA.

Apalis binotata Reichenow; Sharpe, Hand-l. B. iv. p. 223; Reichen. Vög. Afrikas, iii. p. 608.

No. 304. ♀. River Ja, Dec. 26, 1903.
No. 581. ♂ ad. „ May 26, 1904.
No. 720. Ad. „ June 24, 1904.
No. 1488. ♀ ad. River Ja, March 2, 1906.
No. 1680. ♂ ad. „ April 15, 1906.

The female is a little smaller, and differs from the male in having a white streak on each side of the throat, which is black, extending on to the fore-neck.

EUPRINODES SCHISTACEUS.

Euprinodes schistaceus Cass. Pr. Philad. Acad. 1859, p. 38; Sharpe, Hand-l. B. iv. p. 223 (1903).

Euprinodes leucogaster Sharpe, Bull. B. O. C. xiv. p. 94 (1904).

Apalis schistacea Reichenow, Vög. Afrikas, iii. p. 603.

No. 2202. ♂. Bitje, River Ja, Jan. 25, 1907.

I have compared this specimen with the type of my *Euprinodes leucogaster*, and there is no doubt that it is identical with the latter species from Fernando Po. Dr. Reichenow, however, has suggested that it is the same as *E. schistaceus* of Cassin, and in this he is probably right, though Cassin's description differs in several small points.

EUPRINODES RUFIGULARIS.

Euprinodes rufigularis (Fraser); Sharpe, Hand-l. B. iv. p. 223 (1903).

Euprinodes olivaceus (Strickl.); Sharpe, t. c. p. 223.

Apalis rufigularis Alexander, Ibis, 1903, p. 371 ; Reichen. Vög. Afrikas, iii. p. 605.

Apalis olivacea Reichenow, t. c. p. 609.

Nos. 2047, 2057. ♂ imm. et juv. Bitje, River Ja, Nov. 6, 1906.

Nos. 2153. ♀ ad.; 2141, 2161, 2170, 2201. Juv. Bitje, Jan. 1907.

Nos. 2281, 2282. ♂ juv., ♀ ad. Bitje, Feb. 1907.

Both the adult birds with rufous throats are females, and all the others are young, olive-green above and with more or less sulphur-yellow on the under surface. Mr. Seimund obtained four specimens on Fernando Po, a male and a female, with rufous throats, and a pair of young birds, which are yellowish underneath. One of the rufous-throated birds has the white belly tinged with yellow, thus shewing traces of immaturity, and proving the correctness of Mr. Alexander's statement (*l. c.*) that the young birds (*E. olivaceus*) are yellow below.

EREMOMELA BADICEPS.

Eremomela badiceps (Fraser) ; Sharpe, Hand-l. B. iv. p. 231 ; Reichenow, Vög. Afrikas, iii. p. 641.

No. 238. ♀ ad. Efulen, Nov. 16, 1902.

a. ♀ ad. Efulen, Dec. 1, 1902.

b. ♀ ad. „ March 22, 1902.

No. 688. ♀ juv. River Ja, June 15, 1904.

No. 987. ♀ ad. Efulen, July 28, 1905.

No. 1029. ♀ juv. „ Aug. 10, 1905.

Nos. 1265, 1399, 1492, 1663, 1771. ♂ ad. River Ja, January to June, 1906.

No. 2041. ♂ ad. Bitje, River Ja, Nov. 3, 1906.

No. 2113. ♂ pull. „ „ Dec. 3, 1906.

CAMAROPTERA GRISEIVIRIDIS.

Camaroptera tincta (Cass.) ; Sharpe, Hand-l. B. iv. p. 232 (1903).

Camaroptera griseoviridis (P. L. S. Müll.) ; Reichenow, Vög. Afrikas, iii. p. 616 (1905).

a. ♀ ad. Efulen, May 19, 1902.

No. 287. ♂ ad. River Ja, Dec. 21, 1903.

No. 420. ♂ ad. Efulen, April 2, 1904.

Nos. 516, 542, 594. ♀ ad.; 541, 570, 571. ♂ ad. River Ja, May 1904. Eggs forming.

No. 1122. ♂ ad. Zima Country, Oct. 12, 1905.

Nos. 1188, 1260, 1502, 1518. ♂; 1495. ♀ ad. River Ja, Dec. 1905 to March 1906.

Nos. 1727, 1876, 1886. ♂; 1729, 1898. ♀ ad. River Ja, June 8 to Aug. 9, 1906.

Nos. 2025, 2097, 2261, 2390, 2391, 2405, 2490. ♂ ad.; 2370. ♀ ad. Bitje, River Ja, October 1906 to April 1907.

[No. 420 was shot while perched on the tip of an upright bare twig in the Mission plantation. It was singing a little song, if such it might be called, consisting of a single loud, sharp note uttered quickly five times, with a pause following. This is undoubtedly the little bird I have often seen threading its way through brush heaps and tangled vines, looking for insects.—G. L. B.]

CAMAROPTERA CHLORONOTA.

Camaroptera chloronota Reichenow, Orn. MB. 1895, p. 96; id. Vög. Afrikas, iii. p. 620 (1905).

Camaroptera granti Alexander, Bull. B. O. C. xiii. p. 36 (1903); id. Ibis, 1903, p. 369; Sharpe, Hand-l. B. iv. p. 232 (1903).

a, *b*. ♂ ad. et imm. Efulen, Feb. to August, 1902.

No. 551. ♂ ad. River Ja, May 23, 1904. Testes rather large.

No. 1077. ♂ ad. Efulen, Aug. 25, 1905.

No. 1109. ♀ juv. Zima Country, Oct. 11, 1905.

No. 1247. ♂ imm. River Ja, Jan. 1906.

Nos. 1723, 1737. ♂ ad. et juv. River Ja, June 1906.

No. 2023. pull. Bitje, Oct. 29, 1906.

No. 2227. imm. ,, Jan. 29, 1907.

Although somewhat smaller in size than a specimen of *C. granti* from Fernando Po, presented to the Museum by Mr. Alexander, I consider that the Camaroon specimens are identical with it, and it also seems certain that *C. granti* must be referred to *C. chloronota* of Reichenow.

CAMAROPTERA CONCOLOR.

Camaroptera concolor Hartl.; Reichenow, Vög. Afrikas, ii. p. 620.

Nos. 1892, 1899. ♂ ♀ ad. River Ja, Aug. 7–9, 1906.

No. 2113. pull. Bitye, Dec. 3, 1906.

CAMAROPTERA SUPERCILIARIS.

Camaroptera superciliaris (Fraser); Sharpe, Hand-l. B. iv. p. 232: Reichenow, Vög. Afr. iii. p. 621.

a. ♀ ad. Efulen, March 15, 1902.

Nos. 356, 430. ♂ ad. Efulen, February, April, 1904.

No. 1119. ♂ ad. Zima Country, Dec. 12, 1905.

No. 1761. ♂ ad. River Ja, June 13, 1906.

No. 2119. ♂ ad. Bitje, River Ja, Jan. 25, 1907.

The Camaroon specimens seem to me to be rather darker green above, and somewhat deeper grey beneath, than those from Fernando Po and the Gold Coast.

PARMOPTILA WOODHOUSEI.

Parmoptila woodhousei Cass.; Sharpe, Cat. B. Brit. Mus. x. p. 63 (1885); id. Hand-l. B. iv. p. 233 (1903); Reichenow, Vög. Afrikas, iii. p. 530.

a, b. ♂ ad. Efulen, Dec. 12, 1902.

c, d. ♂ ♀ ad. River Ja, Dec. 21–27, 1903.

No. 410. ♀ juv. Efulen, March 30, 1904.

Nos. 851, 940. ♂; 775, 889. ♀ ad. Efulen, June 8 to July 12, 1905.

Nos. 1356–1359, 1479. ♂ ♀ ad. et juv. River Ja, Jan. 24 to Feb. 28, 1906.

Nos. 1784–1787. ♂ ♀. River Ja, June 21, 1906.

No. 1928. ♂ ad. 25 miles from Kribi, Sept. 8, 1906.

There is little difference in colour and markings between the two sexes, but the male shews a distinct chestnut band across the forehead. Mr. Bates's note on the young bird (No. 410) is of the greatest interest, as it will be remembered that I described a bird from Old Calabar as a new genus, *Lobornis*, on account of the white wattles on the gape. In my 'Hand-list of Birds' (vol. iv. p. 233) appears a note from Pastor Kleinschmidt suggesting that *Lobornis alexandri* would turn out to be a young *Parmoptila*. I do not know whence Mr. Kleinschmidt drew his inspiration, but it turns out to be a happy one, for I think that there can be no question of the correctness of his suggestion, and *Lobornis alexandri* must be united to *Parmoptila woodhousei*. It may be, of course, that *L. alexandri* is the young of *Parmoptila rubrifrons* (Sharpe & Ussher), but that we cannot determine until we get adult birds from Old Calabar.

[No. 410 had white wattles at the corners of its mouth. A nest, said to be that of this bird, had in it four small round white eggs, measuring 10 × 13 millimetres. They were nearly ready to hatch, and the young birds in them had the same kind of white wattles as the specimen referred to. The nest was a large dome-shaped pile of dried leaves and grass, lined with fine fibres of dry plantain-leaves, with an entrance at the side. It was nearly 200 millimetres high, but the width of the entrance was only 50 mm.—G. L. B.]

PHOLIDORNIS RUSHIÆ.

Pholidornis rushiæ (Cass.); Sharpe, Hand-l. B. iv. p. 233; Reichenow, Vög. Afrikas, iii. p. 529.

No. 458. Ad. River Ja, March 1904. Skinned by a native.

No. 1440. ♀ ad. River Ja, Feb. 20, 1906.

Nos. 1781, 1782. ♂ ♀ ad. River Ja, June 20, 1906.

No. 1868. ♀ ad. River Ja, July 27, 1905.

This is the true *P. rushiæ* of Gaboon, and I find that *P. bedfordi* of Fernando Po is scarcely distinct. The Gold Coast birds are certainly different, and Dr. Hartert is correct in naming the species *Pholidornis ussheri*. The streaks on the throat and chest are much broader and darker in the Camaroon bird, and the yellow of the abdomen seems to extend higher up over the chest. The nestling has no streaks on the throat, which is ashy white, the chest greyish, and the breast and abdomen paler than in the adult and more sulphur-yellow. The rump and upper tail-coverts are also paler yellow in the young birds, which have the back slightly shaded with olive and with the streaks on the head browner and not so distinct.

STIPHRORNIS GABONENSIS.

Stiphrornis gabonensis Sharpe, Cat. B. Brit. Mus. vii. p. 174, pl. vi. fig. 2 (1883); id. Hand-l. B. iv. p. 234; Reichenow, Vög. Afrikas, iii. p. 623.

Nos. 1947, 1952. ♂; 1945, 1960, 1971. ♀ ad. 25 miles from Kribi, Sept. 19–25, 1906.

Nos. 2439, 2548. ♀; 3579, 2588. ♂ ad. Between Kribi and Efulen, June 18 to July 3, 1907.

STIPHRORNIS XANTHOGASTER.

Stiphrornis xanthogaster Sharpe; id. Ibis, 1905, p. 476, pl. ix.; Reichenow, Vög. Afrikas, iii. p. 624.

No. 1081. ♀ juv. Zima Country, Oct. 8, 1905.

Nos. 1235, 1259. ♂ ad. River Ja, Jan. 3, 7, 1906.

The young bird has the throat, breast, and abdomen white with a slight shade of yellow, deepening on the chest, which is slightly mottled with dusky margins to the feathers.

Nos. 2277. ♂ ad.; 2322, 2467. ♀ ad.; 2040. ♀ juv. Bitje, River Ja, Nov. 3, 1906, to April 16, 1907.

HYLIA PRASINA.

Hylia prasina (Cass.); Sharpe, Hand-l. B. iv. p. 234; Reichenow, Vög. Afrikas, iii. p. 622.

Nos. 448, 936. ♂ ad.; 1011, 1053, 1068. Efulen, April, July, August.

Nos. 569, 580, 624. ♂; 515, 537, 565, 645. ♀ ad. River Ja, May 17 to June 8, 1904.

Nos. 1407, 1567, 1805. ♂ ad.; 1210, 1677, 1735, 1745. ♀ ad. River Ja, Dec. 1905 to June 1906.

Nos. 1989, 2040, 2147, 2309, 2329, 2364, 2373, 2396. ♂ ad. et juv. Bitje, River Ja, Oct. 23, 1906, to April 18, 1907.

Nos. 1125, 1126. ♂ ad. et juv. Zima Country, Oct. 13, 1905.

Mr. Bates has sent home a good series of this little bird, and it is interesting to see that the plumage does not vary with the season of the year. The young bird has yellowish-brown feet and a yellowish bill and is altogether greener above and below, but the changes of plumage from youth to age have not yet been described.

Hylia poensis of Alexander cannot be separated from the continental form, as, indeed, he himself has also found out.

PRINIA MYSTACEA.

Prinia mystacea Rüpp.; Sharpe, Hand-l. B. iv. p. 240; Reichenow, Vög. Afrikas, iii. p. 590.

Nos. 34, 89, 253, 1501, 1510, 1858. ♂ ad. et juv.; 256, 1443, 1540, 1558, 1561. ♀ ad. et juv. River Ja, Feb. 1903 to July 25, 1906.

Nos. 2054, 2248, 2417. ♂; 2051, 2485. ♀ ad. Bitje, Nov. 1906, to April 22, 1907.

BURNESIA BAIRDI.

Burnesia bairdi (Cass.); Sharpe, Hand-l. B. iv. p. 242.

Prinia bairdi Reichenow, Vög. Afrikas, p. 597.

Nos. 1107, 1112, 1132. ♀ ad. et juv. Zima Country, Oct. 11–14, 1905.

Nos. 1291, 1398, 1490. ♀ ad.; 1603, 1675, 1738. ♂ ad. et juv. River Ja, Jan. to April 1906.

No. 2105. ♀ ad. Bitje, River Ja, Nov. 29, 1906.

No. 2191. ♂ ad. " " Jan. 23, 1907.

Nos. 2450, 2480. ♂ ad. et imm. Bitje, River Ja, April 12–21, 1907.

No. 2538. ♀ ad. Bitje, River Ja, May 24, 1907.

I perceive that a mistake, as sometimes happens, has taken place in my "Key to the Species" of *Burnesia* in the 'Catalogue of Birds' (vii. p. 203); *B. bairdi* should be in the second section of the genus, with a black sub-terminal bar on the tail-feathers.

The young bird differs greatly from the adults, being uniform below and not barred, while the spots on the wing-coverts are rufescent instead of white. The under surface is ashy, whiter on the centre of the breast and abdomen. The lower mandible is yellowish in the young bird.

BURNESIA LEUCOPOGON.

Burnesia leucopogon (Cab.); Sharpe, Hand-l. B. iv. p. 241.

Prinia leucopogon Reichenow, Vög. Afrikas, iii. p. 595.

Nos. 171, 247. ♀; 248. ♂ ad. Efulen, April 1902 to Nov. 1903. "Tendè."

Nos. 13, 276, 301, 522, 562, 679. ♂ ad.; 61, 270, 632, 639. ♀ ad. River Ja, Jan. 1903 to June 1904.

Nos. 1227, 1266, 1277, 1280. ♂; 1376. ♀ ad.; 1376 *a*, *b*. Pull. River Ja, Jan. to April 1906.

Nos. 2471. ♂; 1995, 2027, 2300, 2432, 2532. ♀ ad. Bitje, River Ja, Oct. 1906 to May 1907.

I notice that Prof. Sjöstedt records *B. reichenowi* from Camaroon and does not admit *B. leucopogon*, but the specimens above mentioned certainly agree with the series from the Congo rather than with those from Equatorial Africa.

[This, like the other Warblers, is a bird of the more open ground around the villages, and hence is more abundant at the Ja than about Efulen, where there are few breaks in the forest. These little birds were often seen flitting quickly, two or three together, among the bushes, and answering each other in notes that sometimes sounded like the words "Speak quick! speak quick!" uttered in a very keen, penetrating tone.—G. L. B.]

FRASERIA CINERASCENS.

Fraseria cinerascens Hartl.; Sharpe, Hand-l. B. iv. p. 266; Reichenow, Vög. Afrikas, ii. p. 446.

a. ♀ ad. 25 miles from Batanga, Dec. 7, 1901.

b. Juv. Efulen, Dec. 16, 1902.

Nos. 101, 107. ♂ ♀. Efulen, March, 27, 28, 1903.

Nos. 973. ♂ ad.; 974, 975. ♀ ad. et imm. Efulen, July 27, 1905.

[My specimens of this bird were obtained on the banks of the Kribi River. Every time that I saw it the bird was perched on the bushes or roots overhanging the river-bank, and, when disturbed, flew to a similar place; it acted just like a little Kingfisher. The stomachs contained insects.—G. L. B.]

FRASERIA OCREATA.

Fraseria ocreata (Strickl.); Sharpe, Hand-l. B. iv. p. 266; Reichenow, Vög. Afrikas, ii. p. 445.

a. ♂ ad. Efulen, Jan. 1, 1902.
b. ♂ ad. ,, Dec. 11, 1902. "Nsanze."
No. 145. ♀ ad. Efulen, May 2, 1903.
Nos. 38, 68. River Ja, Feb. 1903. "Osese."
Nos. 772, 818. ♂ ♀ ad. Efulen, June 13, 29, 1905.
Nos. 1015, 1073. ♂ ad. ,, Aug. 8, 22, 1905.
Nos. 1281, 1373. ♂ ad.: 1595, 1609. ♀; 1608. ♂. River Ja, Jan. 10–29 to March 26, 1906.

The specimens belong to the true *F. ocreata*, and the birds from the Gold Coast are evidently *F. prosphora* of Oberholser, which has the head of the same slaty-grey colour as the back. We have several specimens of the latter bird from the Gold Coast.

[The "nsanze"—or "osese," as it is called at the Ja—is a bird of the small trees on old cleared ground, where it feeds on insects. I have been told that it has a song.—G. L. B.]

SIGMODUS RUFIVENTER.

Sigmodus rufiventris Bp.; Sharpe, Hand-l. B. iv. p. 274 Reichenow, Vög. Afrikas, ii. p. 537 (1903).

a, b. ♂; *c.* ♀ ad. Efulen, March 22, 1902.
No. 995. ♂ ad. ,, Aug. 1, 1905.
No. 1120. ♂ ad. Zima Country, Oct. 12, 1905.
No. 1845. ♀ ad. River Ja, July 15, 1906.
Nos. 2070, 2071. ♂ juv. Bitje, River Ja, Nov. 15, 1906.

FISCUS MACKINNONI.

Lanius mackinnoni Sharpe, Ibis, 1891, pp. 444, 596, pl. xiii.; Sjöstedt, t. c. p. 79; Reichenow, Vög. Afrikas, ii. p. 617 (1903).

Fiscus mackinnoni Sharpe, Hand-l. B. iv. p. 285 (1903).

a–d. ♂ ♀ ad. Efulen, Dec. 12, 1901, to July 26, 1905. "Asanze."

Nos. 152, 970. ♂ juv., ♀ ad. Efulen, May 20, 1903, July 26, 1905.

Nos. 790, 800. ♂ juv.; 878, 944. ♀ ad. Efulen, June 16 to July 20, 1905.

Nos. 1906, 1100. ♂ : 1101. ♀. Zima Country, Oct. 9–10, 1905.

Nos. 1396, 1560. ♂ ♀ ad. River Ja, Feb. 8, 1906.

[This Shrike seems to spend most of its time sitting motionless, but in plain sight, on a twig, or on a bush in a clearing. Sometimes it is seen to pounce down suddenly on the ground, probably to catch an insect or a frog, for I have found frogs' bones in the stomach of one. I have never seen it in the forest.—G. L. B.]

MALACONOTUS GABONENSIS.

Malaconotus gabonensis Shelley, Ibis, 1894, p. 434; Sharpe, Hand-l. B. iv. p. 289 (1903).

Malaconotus lessoni (nec Salvad.); Reichenow, t. c. p. 604 (1903).

Malaconotus cruentus gabonensis Neum. Orn. MB. xi. pp. 87, 89 (1903).

a. ♀ imm. Efulen, Jan. 17, 1902. "Ekô."
b. ♀ ad. ,, Feb. 21, 1902. "Ékôlat."
c. ♀ ad. ,, March 6, 1902.
d. ♂ ad. ,, April 3, 1902.
e. ♂ ad. ,, June 25, 1902.

Nos. 1000, 1022. ♂ ♀ ad. Efulen, August 4, 9, 1905.

No. 1340. ♂ juv. River Ja, Jan. 22, 1906.

Nos. 1581, 1621. ♀ ad. River Ja, March 21–28, 1906.

No. 2006. ♂ ad. Bitje, River Ja, Oct. 27, 1906.

The adult females seem to be exactly like the males, so that the birds which are paler and more orange below can only be examples of individual variation. Dr. Reichenow mentions such a pale-coloured individual, and the specimen procured by Crossley in Camaroon is also much paler in colour than Mr. Bates's series. It has a paler and more brownish bill, which, I think, would indicate immaturity.

CHLOROPHONEUS BATESI, sp. n.

Chlorophoneus multicolor (Gray) pt.; Sharpe, Hand-l. B. iv. p. 290; Reichenow, Vög. Afrikas, ii p. 565.

♂. Similis *C. multicolori*, sed subcaudalibus scarlatinis pectori concoloribus, cauda nigra, fascia scarlatina terminata distinguendus. Long. tot. 8·5 poll., culm. 0·8, alæ 4·8, caudæ 3·35, tarsi 1·2.

Nos. 1226, 1258. ♀ ad. River Ja, Jan. 1, 7, 1906. Eggs beginning to form.

No. 1603. ♂ ad. River Ja, March 25, 1906. Testes very large.

The two females are like the male and have scarlet breasts, but not so bright as in the male. The under tail-coverts are yellow, scarcely washed with scarlet, and the abdomen is not so red as in the male, being, in one of them, yellow with a slight wash of scarlet.

The male has the under tail-coverts scarlet like the breast, and the tail is black, with a broad tip of orange-scarlet. In this respect it differs from the two females, which have green tails with pale orange tips, preceded by a slight shade of blackish (in one specimen). According to the conclusions of Prof. Reichenow and Prof. Neumann, *C. multicolor* is not found in Camaroon; and having compared Mr. Bates's specimens with a good series from the Gold Coast, I believe that the two species are distinct.

LANIARIUS LUEHDERI.

Laniarius luehderi (Reichenow); Sjöstedt, t. c. p. 77; Reichenow, Vög. Afrikas, ii. p. 584 (1903); Sharpe, Hand-l. B. iv. p. 293 (1903).

a–d. ♂ ad. Efulen, Jan. 24 to July 3, 1902. "Nko'e bikōtok."

e. ♀ ad.; Nos. 524, 554, 595. ♂ ad. River Ja, Jan. 1903 to May 1904.

No. 1118. ♂ juv. Zima Country, Oct. 12, 1905.

Nos. 1312, 1528, 1777, 1798, 1880. ♂; 1392, 1522, 1650. ♀ ad. River Ja, Jan. 15, 1906, to August 2, 1906.

No. 2064. pull. Bitje, River Ja, Nov. 12, 1906.

The female does not differ from the male in colour.

[One of the commonest birds in the thick, impenetrable growth of bushes, small trees, and vines that cover old cleared land. It is the most home-keeping of birds; I have never seen it fly out of its thickets. The call and answer of the male and female are sounds continually in one's ears, when walking on the paths through such places; but the birds are not often seen.—G. L. B.]

LANIARIUS LEUCORHYNCHUS.

Laniarius leucorhynchus Hartl.; Reichenow, Vög. Afrikas, ii. p. 573; Sharpe, Hand-l. B. iv. p. 295.

a. ♂ ad. Efulen, Nov. 5, 1901.
b. ♂? „ Jan. 18, 1902.
c. ♀. „ March 21, 1902.

No. 748. ♀ ad. Efulen, June 9, 1905.

Nos. 1003, 1075. ♂ ♀ ad. Efulen, Aug. 5, 22, 1905.

The two last-named specimens have whitish bills, and I should have supposed them to be young birds. Prof. Reichenow, however, says that it is very old birds which have the bill white. The black-billed male seems to me to be in much finer plumage than the white-billed birds.

No. 1370. ♀ ad. River Ja, Jan. 27, 1906. Eggs beginning to form. Bill black.

Nos. 1542, 1589. ♂. River Ja, March 13, 22, 1906.

No. 1542 has a black bill and the testes are given as rather large, while No. 1589 has a white bill and the testes are noted as very small.

No. 1653. ♂ ad. River Ja, April 4, 1906.

DRYOSCOPUS BOCAGEI.

Laniarius bocagei Reichenow, Orn. MB. 1894, p. 125; id. J. f. O. 1896, Taf. ii. fig. 2.

Chlorophoneus bocagei Reichenow, Vög. Afrikas, ii. p. 357 (1903).

No. 348. ♀ ad. River Ja, Jan. 11, 1904. "Asanze."

No. 597. ♀ ad. „ May 28, 1904. Eggs forming.

No. 610. ♂ ad. „ June 2, 1904. Testes very large.

Nos. 1409, 1878. ♂; 1416, 1665, 1875, 1910. ♀ ad. River Ja, Feb. to Aug. 1906.

This is the first time that I have seen examples of this interesting species, and I now find that my *Dryoscopus jacksoni* from Mount Elgon (Bull. B. O. C. xi. p. 57, 1901) is very close to Dr. Reichenow's *D. bocagei.* When I described *D. jacksoni,* I had no specimens in the Museum with which to compare it, and my description was in consequence published without any indication of an ally. This failure of mine has consequently misled Professor Reichenow, who, in his third volume of the 'Vögel Afrikas,' has placed *D. jacksoni* in the genus *Laniarius* (p. 576), and *D. bocagei* (p. 557) in the genus *Chlorophoneus.* The differences between the two species are very small, and consist principally in the blacker wings and tail of *D. jacksoni,* these being decidedly greyer in *D. bocagei*; but a larger series may easily prove the two species to be identical.

[Of this species I have seen only the examples that I shot at the Ja. All were in the small trees bordering cultivated ground. One of them was heard making a call much like that of *D. verreauxi.* No. 597 was shot just after leaving the nest, in a little tree on the border of a patch of maize. The nest was shallow, cup-shaped, and composed entirely of the dry tendrils of a vine, woven together.—G. L. B.]

DRYOSCOPUS SENEGALENSIS.

Dryoscopus verreauxi Cab. & Reichenow; Neum. J. f. O. 1899, p. 414.

Dryoscopus senegalensis (Hartl.); Reichenow, t. c. ii. p. 592 (1903); Sharpe, Hand-l. B. iv. p. 298 (1903).

a. ♂ ad. Efulen, Jan. 9, 1902. "Shot while pairing."
b. ♀ ad. „ Jan. 28, 1902.
c. ♂ ad. „ April 3, 1902.
Nos. 30, 82. ♂. River Ja, Feb. 1903.
Nos. 709, 718. ♀ ad. River Ja, June 23, 1904.
No. 962. ♀ ad. Efulen, July 25, 1905. Ovaries granular.
Nos. 1470, 1534, 1583. ♂ ad.; 1425, 1582, 1587. ♀ ad. River Ja, Feb. and March 1906. The males have the testes large, and in the female the eggs are beginning to form.
Nos. 1996, 2005. ♂ ad. Bitje, River Ja, Oct. 1906.

DRYOSCOPUS TRICOLOR.

Dryoscopus senegalensis, var. *tricolor* Cab. & Reichen.; Reichenow, Vög. Afrikas, ii. p. 591 (1903).

Dryoscopus tricolor Neum. J. f. O. 1899, p. 414.

a, b. ♀ ad. Efulen, March 1902. "Ntyam."

No. 1801. ♀. River Ja, June 25, 1906.

No. 2088. ♀. Bitje, River Ja, Nov. 21, 1906.

It is certainly a very curious fact that there seems to be considerable variation in this species: Prof. Reichenow recognises three forms, all of which occur in Camaroon. Mr. Bates has procured two grey-rumped females in March, which seem to answer to Dr. Reichenow's race *D. tricolor.* I think that these must be young birds, as both have an ochraceous tinge on the under parts.

The name of *senegalensis* for a species which does not occur in Senegal is objectionable and misleading, and should, I contend, be dropped.

[This bird is abundant in the tops of the small trees of old clearings, though it usually keeps out of sight. It is remarkable for the variety of its call-notes. Three or four different calls, supposed to be those of different species, were at last, after patient watching, all traced to this bird. One note seems to be used by the male to call his mate, since it is always answered by a low *churring* sound not far off. Once, after I had shot a female, its mate flew around the place for a long time, uttering cries of distress. At another time I saw a male puff up the white feathers on its back. It flitted about with the big white "*chrysanthemum*" on its back for several minutes, and then flattened its feathers down again.—G. L. B.]

CHAUNONOTUS MELANOLEUCUS.

Hapalophus melanoleucus Verreaux, Rev. Mag. de Zool. 1851, p. 312 (Gaboon).

Chaunonotus sabinei (nec J. E. Gray); Reichenow, Vög. Afrikas, ii. p. 598 (1903), pt.; Sharpe, Hand-l. B. iv. p. 298 (1903), pt.

No. 774. ♀ ad. Efulen, June 13, 1905.

No. 922. ♀ ad. Efulen, July 17, 1905.

No. 977. ♂ ad. „ July 27, 1905.

No. 1065. ♀ ad. „ August 17, 1905.

No. 449. ♀. Efulen, April 18, 1904.

a. ♂ ad. Efulen, April 3, 1902.

b, c. ♀ ad. et ♂ juv. Efulen, Jan. 5–8, 1903.

d, e. ♂ 207, ♀ ad. 213. Efulen, Oct. 17, 22, 1903.

Nos. 1447, 1527. ♂ ad. et imm. River Ja, Feb. 21, March 9, 1906. Testes rather large.

Mr. Bates also met with this species on the Como River, 60 miles from Gaboon.

On comparing the *females* of the *Chaunonoti* from Camaroon and the Congo with those from the Gold Coast, I find that the latter have rufescent instead of dusky brown tails. On this account I think it correct to recognise two forms: the true *C. sabinei* occurring from Sierra Leone to the Gold Coast, and *C. melanoleucus* (Verr.) from Camaroon to the Congo. I cannot see any difference in the plumage of the males. Many grey-headed birds are bright cinnamon-buff below, and I think that these are probably young individuals.

LANIARIUS MAJOR.

Laniarius major (Hartl.); Reichenow, Vög. Afrikas, ii. p. 580 (1903); Sharpe, Hand-l. B. iv. p. 294 (1903).

Laniarius æthiopicus major Neum. J. f. O. 1899, p. 406.

No. 1551. ♀ ad. River Ja, March 5, 1906.

NICATOR CHLORIS.

Nicator chloris (Less.); Reichenow, t. c. p. 554 (1903); Sharpe, Hand-l. B. iv. p. 299 (1903).

a. ♀ ad. Efulen, Jan. 25, 1902. "Ékon."

b. ♂ ad. „ Feb. 1, 1902.

Nos. 736, 741, 753, 778. ♂ ♀ ad. Efulen, June 7–13, 1905.

The female is perceptibly smaller than the male, as Prof. Reichenow has pointed out in his 'Vögel Afrikas.'

No. 1377. ♂ ad. River Ja, Jan. 31, 1906. Testes rather large.

No. 1400. ♂ ad. River Ja, Feb. 9, 1906.

No. 1465. ♀ ad. ,, Feb. 26, 1906. Eggs beginning to form.

No. 1848. ♂ ad. River Ja, July 17, 1906.

No. 1999. ♀ ad. Bitje, River Ja, Oct. 25, 1906.

[This is the only Shrike that I have ever seen in the depths of the forest, but it prefers the more open places and clearings.—G. L. B.]

NICATOR VIREO.

Nicator vireo Cab.; Reichenow, t. c. p. 555 (1903); Sharpe, Hand-l. iv. p. 299 (1903).

No. 75. ♂. River Ja, Feb. 1903.

No. 1423. ♂ ad. River Ja, Feb. 16, 1906. Testes rather large.

No. 1556. ♂ ad. River Ja, March 16, 1906.

No. 2028. ♀ ad. Bitje, River Ja, Oct. 31, 1906.

POMATORHYNCHUS FRATER.

Pomatorhynchus australis frater Reichenow, J. f. O. 1902, p. 258; id. Vög. Afrikas, ii. p. 546 (1903).

Pomatorhynchus frater Sharpe, Hand-l. B. iv. p. 300 (1903).

a. ♀ ad. Efulen, March 21, 1902.

Nos. 561 706. ♂; 585, 927, 1458. ♀ ad. River Ja, May 1904 to Feb. 1906.

No. 2048. ♀. Bitje, River Ja, Nov. 5, 1906.

Since I last made some notes on the Tschagra Bush-Shrikes ('Ibis,' 1901, p. 45), Dr. Reichenow has published his account of the genus *Pomatorhynchus* in his 'Vögel Afrikas.' Of *P. australis* (Smith) he now recognises six races, as follows:—

P. australis.—Brown head, flanked by a broad streak of black on each side. Bill dark horn-grey, the lower mandible entirely pale, or at least at the base.

Hab. S. Africa, north to Benguela.

Prof. Reichenow has apparently only seen young birds, which in all the forms have a pale under mandible. The majority of our specimens have both mandibles black, including one of Sir Andrew Smith's types. This character of the pale bill therefore falls to the ground, and the true features of *P. australis* seem to be its more ashy upper surface, and the very clear fawn-colour on the under surface, this tint pervading the flanks. The eyebrow is very broad and distinct.

P. ussheri (Sharpe) is Professor Reichenow's next species. *Hab.* Gold Coast.

This he separates from *P. australis* on account of its grey fore-neck and sides of body, the under tail-coverts being greyish also. This seems to be a well-marked form.

Then follow three races in which the flanks, fore-neck, and under tail-coverts are fawn-coloured, marked with brownish or yellowish brown.

P. congener.—*Hab.* Nyasaland and the Zambesi. This is said by Professor Reichenow to be nearly allied to *P. ussheri,* but to differ in its black bill [not a character], whiter under surface, and browner upper surface. The sides of the body and under tail-coverts are washed with buffy greyish brown, paler on the fore-neck.

These characters may be admitted, and Dr. Reichenow is correct in believing that Sir John Kirk's Tete specimens belong to his *P. congener.* I named them *P. minor* in 1901 ('Ibis,' 1901, p. 46). He is, however, mistaken in considering General Manning's example from Karonga, which I united with *T. emini* (*l. c.*), to be the same as his *P. congener.* The Karonga bird is much darker than the Tete specimens, and has a distinct grey wash over the centre of the breast and abdomen, instead of being pure white, as in *P. congener.* The back and crown are dark rufous brown. In *P. congener* the lower surface is very pale, and there is scarcely any greyish shade on the fore-neck.

P. frater is the Camaroon form of *P. congener,* but is distinctly a darker bird, especially on the cheeks and sides of the body.

P. minor.—The specimens from Tete, which Capt. Shelley and I thought must belong to Prof. Reichenow's *P. minor,* are apparently *P. congener*. The specimen which Sir John Kirk sent from Usambara Hills, and which I referred to *P. minor*, is certainly the same as the Tete species, and must be, I suppose, also referred to *P. congener*. *P. minor* is from East Africa, from Uhehe north to the Victoria Nyanza. It is allied to *P. ussheri* and *P. congener*, but has the sides of the body and the under tail-coverts washed with buffy ochraceous yellow, lighter on the fore-neck; it is in general somewhat smaller and paler on the upper side.

P. emini attracts attention by its greyish chest and sides, and by its whitish or pale fawn-coloured under tail-coverts. It inhabits the district of the Victoria Nyanza, where a large series was obtained by Mr. F. J. Jackson (*cf.* 'Ibis,' 1901, p. 45).

[*P. frater*, like the species of *Laniarius*, is confined to the thick growth of old cleared land and is common there. It shares the same native name as *Laniarius luehderi*, and its habits and its call-notes are much like those of that bird. It has, besides, some notes that may be called a song, ending in a long trill, in a really sweet voice, though deep and heavy for a bird. I have seen the nest, in a thick bush, six feet from the ground. It was saucer-shaped, composed of rootlets, and not lined. Another, looking like it, and said by the boys to be that of this bird, was composed of dry leaf-petioles.—G. L. B.]

PENTHERES FUNEREUS.

Pentheres funereus (Verr.); Sharpe, Hand-l. B. iv. p. 330 (1903).

Parus funereus Reichenow, Vög. Afrikas, iii. p. 510 (1905).

No. 1013. ♂ ad. Efulen, Aug. 8, 1905.

No. 1840. ♀ ad. River Ja, July 12, 1906.

ZOSTEROPS SENEGALENSIS.

Zosterops senegalensis Bp.; Reichenow, Vög. Afrikas, iii. p. 427 (1905).

No. 246. ♀ ad. Efulen, Nov. 19, 1903.

CINNYRIS SUPERBUS.

Cinnyris superbus (Shaw); Shelley, B. Africa, ii. p. 41 (1900); Reichenow, Vög. Afrikas, iii. p. 477 (1905).

a. ♂ ad. Efulen, June 4, 1902.

b. ♀ ad. ,, Dec. 9, 1902.

c. ♂ ad. ,, March 17, 1903. "Zesol."

Nos. 336, 1649, 1903. ♂ ad. et juv. River Ja, Jan. 1904 to Aug. 1906.

Nos. 1411, 1617. ♀ ad. River Ja, Feb. 12, 1906. Ovaries granular.

CINNYRIS PREUSSI.

Cinnyris preussi Reichenow, J. f. O. 1892, p. 190 (Camaroon); Shelley, B. Africa, ii. p. 81 (1900); Reichen. Vög. Afrikas, iii. p. 491 (1905).

No. 1079. ♂ ad. Zima Country, Oct. 7, 1905.

Nos. 22, 483, 1145, 1163, 1166. ♂ ad. et juv. River Ja, Jan. 1903 to March 1906.

Nos. 24, 1264. ♀ ad.; 1705, 1706, 2067. ♂ ad. River Ja, June 1 to Nov. 14, 1906.

CHALCOMITRA ANGOLENSIS.

Cinnyris angolensis Sharpe & Bouvier, Bull. Soc. Zool France, i. p. 304 (1870: Loango).

Chalcomitra angolensis Shelley, B. Africa, ii. p. 111 (1900) Reichenow, Vög. Afrikas, iii. p. 461 (1905).

Nos. 442, 443, 1060. ♂ ad. et imm.; 921. ♀ ad. Efulen, April 1904 to Aug. 1905.

Nos. 503, 504, 508, 512, 517, 531, 1681. ♂ ad. et imm.; 475, 502, 507, 619, 1682. ♀ ad. River Ja, May 1904 to April 1906.

Nos. 1681, 1682, 1716–18, 1721, 1780. ♂ ♀ ad. et ♂ juv. River Ja, April to June 1906.

No. 2033. ♂ ad. Bitje, River Ja, Nov. 1, 1906.

CYANOMITRA OBSCURA.

Cyanomitra obscura (Jard.); Shelley, B. Africa, ii. p. 125 (1900).

Chalcomitra obscura Reichenow, Vög. Afrikas, iii. p. 450 (1905).

a, b. ♂ ♀ ad. River Ja, Jan., Feb. 1903.

Nos. 469, 482, 494. ♂; 478, 485, 493. ♀ ad. et imm. River Ja, May 1904.

Nos. 1163, 1164, 1170. ♂ ♀ ad. River Ja, Dec. 1905.

Nos. 881, 892. ♀; 893, 894. ♂ ad. Efulen, July 1904.

No. 1968. ♀ ad. 25 miles from Kribi, Sept. 22, 1906.

Nos. 1986, 1988, 2074, 2114. ♂ ♀ ad. Bitje, River Ja, Oct. to Dec. 1906.

[This plainest of the Sun-birds is also the commonest with us. It is probably the builder of most of the Sun-birds' nests that I have seen—exquisite little pocket-nests hung from the bushes and lined with the finest down. It has a pretty song, uttered in a very fine or slender and sweet voice: this consists of half a dozen well-separated notes that skip far up and down the scale, reminding us of a singing lesson.

This bird is not confined to the open country near villages, as are most Sun-birds, but is found in the forest as well.—G. L. B.]

CYANOMITRA VERTICALIS.

Cyanomitra verticalis (Lath.); Shelley, B. Africa, ii. p. 127 (1900).

Chalcomitra verticalis Reichenow, Vög. Afrikas, iii. p. 127 (1904).

No. 510. ♂ ad.; 260, 538, 617. ♀ ad. River Ja, Jan. 1903 to June 1904.

No. 1669. ♀ ad. River Ja, April 11, 1906.

No. 1704. ♀ ad. „ May 31, 1906.

Nos. 2003, 2012, 2053. ♂ ad. et juv. Bitje, Oct., Nov. 1906.

CYANOMITRA CYANOLÆMA.

Cyanomitra cyanolæma (Jard.); Shelley, B. Africa, ii. p. 130 (1900).

Chalcomitra cyanolæma Reichenow, Vög. Afrikas, iii. p. 456 (1905).

Nos. 374, 375, 864, 870, 897, 909. ♂; 160, 908, 925, 937–939. ♀ ad.; 7, 864, 870, 897, 909. ♂; 908, 925, 937–939. ♀ ad. Efulen, March, May, July.

Nos. 1302, 1308. ♂; 1303, 1850. ♀. River Ja, Jan. to July 1906.

No. 1990. ♂ ad. Bitje, River Ja, Oct. 1906.

CYANOMITRA REICHENBACHI.

Cinnyris reichenbachi (Hartl.); Sharpe & Bouvier, Bull. Soc. Zool. France, i. p. 304 (1876: Loango).

Cyanomitra reichenbachi Shelley, B. Africa, ii. p. 137 (1900).

Anabathmus reichenbachi Reichenow, Vög. Afrikas, iii. p. 468 (1905).

No. 501. ♂ ad. River Ja, May 16, 1904.

Nos. 1585, 1586. ♂ ad., ♀ juv. River Ja, March 21, 1906.

ANTHOTHREPTES FRASERI.

Anthothreptes fraseri (Jard. & Selb.); Shelley, B. Africa, ii. p. 141 (1900).

Anthreptes fraseri Reichenow, Vög. Afrikas, iii. p. 441 (1905).

Nos. 139. ♂ juv.; 108, 787. ♂ ad. Efulen, March 30, 1903, to June 1905. Zepol.

No. 1090. ♂ ad. Zima Country, Oct. 8, 1905.

No. 1433. ♂ ad. River Ja, Feb. 18, 1906.

Nos. 1932, 1934. ♂ ad. et juv. 25 miles from Kribi, Sept. 12, 1906.

[This, unlike most of the Sun-birds, is a forest species.—G. L. B.]

ANTHOTHREPTES HYPODILA.

Anthothreptes hypodila (Jard.); Shelley, B. Africa, ii. p. 151 (1900).

Anthreptes collaris hypodilus Reichenow, Vög. Afrikas, iii. p. 443 (1905).

a, b. ♂; *c.* ♀ ad. Efulen, July 1901 to Dec. 1902.

Nos. 486, 511, 1279, 1336, 1655. ♂ ♀ ad. et imm. River Ja, May 1904 to April 1906.

Nos. 849, 907. ♀; 932. ♂ ad. Efulen, July 6–14, 1905.

ANTHOTHREPTES TEPHROLÆMA.

Anthothreptes tephrolæma (Jard. & Fraser); Shelley, B. Africa, ii. p. 156 (1900).

Anthreptes tephrolæma Reichenow, Vög. Afrikas, iii. p. 445 (1905).

a–e. ♂ ♀ ad. Efulen, April to June 1902. "Gesol."

Nos. 272, 532, 1679. ♀; 1144. ♂ ad. River Ja, Dec. 17, 1903, to April 1906.

No. 2043. ♂ ad. Bitje, River Ja, Nov. 3, 1906.

MOTACILLA CLARA (nom. nov.).

Motacilla longicauda Rüpp. (nec Gm.); Sharpe, Cat. B. Mus. Brit. x. p. 495 (1885); Reichenow, Vög. Afrikas, iii. p. 301 (1904); Shelley, B. Africa, ii. p. 274 (1900).

a. ♀ ad. Efulen, Jan. 21, 1902. "Mese" or "Mengeme-ntem."

No. 110. ♂ ad. Efulen, March 30, 1903.

There being already a *Motacilla longicauda* of Gmelin, I propose the emended name of *clara* for this Wagtail (*M. longicauda* Rüpp., nec Gm.).

MOTACILLA FLAVA.

Motacilla flava Linn.; Sharpe, Cat. B. Brit. Mus. x. p. 516, pl. vi. figs. 3–5 (1885).

Budytes flavus Reichenow, Vög. Afrikas, iii. p. 303 (1904).

Nos. 1137, 1138. Juv. River Ja, Oct. 24. 1905.

Nos. 2044, 2073, 2090. ♀ imm. Bitje, River Ja, Nov. 1906.

MOTACILLA VIDUA.

Motacilla vidua Sundev.; Shelley, B. Africa, ii. p. 268 (1900); Reichenow, Vög. Afrikas, iii. p. 296 (1904).

No. 1873. ♀ ad. River Ja, July 30, 1906.

SERINUS PUNCTIGULA.

Serinus punctigula Reichenow, Orn. MB. vi. p. 23 (1898: Grasland and Sanaga, Camaroon).

Serinus icterus punctigula Reichenow, Vög. Afrikas, iii. p. 272 (1904).

Nos. 694, 1468, 1474, 1530, 1535, 1658, 1670, 1673. ♂ ♀ ad. et juv. River Ja, June 16, 1904, to April 1906.

Nos. 1808. ♂; 1809, 1811. ♀ ad. River Ja, June 1906.

Nos. 2066. ♀; 2425. ♂; 2448. ♀ ad. Bitje, River Ja, Nov. 1906 to April 1907.

SERINUS ICTERUS.

Serinus icterus (Vieill.); Reichenow, Vög. Afrikas, iii. p. 269 (1904).

Nos. 557, 704. ♂ ♀ ad. River Ja, May 23, 1904, to June 18, 1904.

[All these specimens of *Serinus*, which appear to belong to two species, were obtained on weedy waste-ground about the villages, where they come to eat the ripe seeds of a species of *Senecio*.—G. L. B.]

PASSER GRISEUS.

Passer diffusus (A. Smith); Sharpe, Cat. B. xii. p. 336 (1888).

Passer griseus (Vieill.); Reichenow, Vög. Afrikas, iii. p. 230 (1904).

a–d. ♂ ad. Efulen, Jan. 7, 1902, to April 1904. "Mvakume."

Nos. 2321, 2525. ♂ ♀ ad. Bitje, River Ja, March, May.

[This is the scavenger of the village streets, and is never seen far from a village. It is one of the very few birds that the native boys refuse to eat. The reason they give is that it feeds on filth.—G. L. B.]

EMBERIZA CABANISI.

Polymitra (*Fringillaria*) *cabanisi* Reichenow, J. f. O. 1875, p. 233, pl. ii. figs. 2, 3.

Emberiza cabanisi Sharpe, Cat. B. xii. p. 503 (1888); Shelley, B. Africa, iii. p. 150 (1902); Reichenow, Vög. Afrikas, iii. p. 283 (1904).

Nos. 189, 364. ♂ ♀ ad. Efulen, Feb.

Nos. 603, 689, 1378, 1570, 1640, 1916. ♂ ♀ ad. et juv. River Ja, May 1904 to Aug. 1906.

Nos. 2534, 2535. ♂ ad. Bitje, River Ja, May 1907.

The female agrees closely with a hen bird obtained by Emin Pasha at Tingasi (*cf.* Shelley, P. Z. S. 1888, p. 37). It is a browner bird than the male and has the white bands on the wings less pronounced than in the latter. It is also less bright underneath, the yellow colour being tinged with saffron, while the cheeks and throat are isabelline. The greyish centre to the crown is obsolete in two specimens, and only a faint spot is to be seen on one of the males.

[All my specimens of this little Bunting were shot on stumps, brush, &c. in the midst of cultivated ground.—G. L. B.]

VIDUA SERENA.

Vidua serena (Linn.); Reichenow, Vög. Afrikas, iii. p. 217 (1904).

Vidua principalis (Linn.); Sharpe, Cat. B. Brit. Mus. xiii. p. 203 (1890).

a, b. ♂ ad. et imm. Efulen, June and July.
No. 1922. ♂ juv. „ Aug. 25, 1906.
No. 1623. ♂ juv. River Ja, March 28, 1906.
No. 1707. ♀ ad. „ June 1, 1906.

PYROMELANA FLAMMICEPS.

Pyromelana flammiceps (Swains.); Sharpe, Cat. B. Brit. Mus. xiii. p. 228 (1890); Reichenow, Vög. Afrikas, iii. p. 118 (1904).

No. 4. ♀ ad. River Ja, Jan. 1903.

Nos. 316, 1143, 1153, 1298, 1314, 1315, 1346. ♂ ♀ ad. et juv. River Ja, December and January.

Nos. 1819, 1820, 1825, 1829, 1877. ♂ ♀ ad. et juv. River Ja, June to August 1896.

Nos. 1979. ♀; 1981, 2014. ♂ ad. Bitje, River Ja, October 1906.

ESTRELDA OCCIDENTALIS.

Estrelda occidentalis Jard. & Fraser, Contr. Orn. 1851, p. 156 (Fernando Po).

Estrilda rubriventris Sharpe, Cat. B. Brit. Mus. xiii. p. 393 (1890).

Estrilda astrild occidentalis Reichenow, Vög. Afrikas, iii. p. 180 (1904).

Nos. 255, 463, 572, 1405, 1529, 1659. ♂ ♀ ad. River Ja, Dec. 14, 1903, to April 1906.

Nos. 2120, 2288. ♀; 2482. ♂ ad. Bitje, River Ja, December, February, April.

ESTRILDA ATRICAPILLA.

Estrilda atricapilla Verr.; Sharpe, Cat. B. Brit. Mus. xiii. p. 399 (1890); Reichenow, Vög. Afrikas, iii. p. 188 (1904).

Nos. 769, 847, 848, 868, 869, 882. ♂ ♀ ad. et imm. Efulen, May 1902 to July 1905.

Nos. 1238. ♀ imm.; 1494, 1524, 1531, 1567. ♂ ♀ ad. et imm. River Ja, Jan. to April 1906.

No. 2305. ♂; 2306, 2409. ♀ ad. Bitje, River Ja, March 1907.

Estrilda nonnula.

Estrilda nonnula (Hartl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 400 (1890); Reichenow, Vög. Afrikas, iii. p. 188 (1904).

Nos. 280, 540, 602, 579, 1301, 1445, 1471, 1523, 1541, 1544. ♂ ♀ ad. et imm. River Ja, Jan. 1903 to March 1906. "Osanze."

Nos. 2378, 2393. ♂; 2427. ♀ ad. Bitje, River Ja, March, April 1907.

Sporæginthus melpodus.

Sporæginthus melpodus (Vieill.); Sharpe, Cat. B. Brit. Mus. xiii. p. 325 (1890).

Estrilda melpoda Reichenow, Vög. Afrikas, iii. p. 186 (1904).

No. 858. ♂ ad. Efulen, Dec. 16, 1902, to July 1905. "Ôsanze."

Nos. 665, 1516, 1517, 1694. ♂ ♀ ad. River Ja, June 11, 1904, to May 1906.

Nos. 2180, 2421, 2422. ♂ ad. et imm.; 2428, 2447. ♀ ad. Bitje, River Ja, Jan. to April 1907.

The female bird differs from the males in the Museum in having the grey head washed slightly with brown, also in having the crimson of the rump duller, and the orange colour on the face much paler.

Spermestes poensis.

Spermestes poensis (Fraser); Sharpe, Cat. B. Brit. Mus. xiii. p. 262 (1890); Reichenow, Vög. Afrikas, iii. p. 152 (1904).

Nos. 765, 840, 846, 854. ♂ ♀ ad. et juv. Efulen, Dec. 9, 1902, to July 1905. "Égile."

One of the December specimens is just beginning to moult from a brown plumage into the black dress, while the other is in full plumage. The male killed in March has nearly completed his moult from the brown dress.

Nos. 1114, 1115. ♂ ♀ ad. Zima Country, Oct. 11, 12, 1905.

Nos. 653, 654, 1158, 1159, 1328. ♂ ad. et ♀ juv. River Ja, June 1904 to Jan. 1906.

Nos. 2079, 2095. Pull. Bitje, River Ja, November 1906.

No. 2592. ♂ ad. Between Kribi and Efulen, July 4, 1907.

SPERMESTES CUCULLATA.

Spermestes cucullata Swains.; Sharpe, Cat. B. Brit. Mus. xiii. p. 264 (1890); Reichenow, Vög. Afrikas, iii. p. 119 (1904).

Nos. 528, 587, 588, 668. ♂ ♀ ad. River Ja, May and June 1904.

No. 2078, 2483. ♂ ad. et imm. Bitje, River Ja, November, April.

NIGRITA PINARONOTA.

Nigrita pinaronota Sharpe, Cat. B. Brit. Mus. xiii. p. 318 (1890).

Nigrita fusconota Fraser; Reichenow, Vög. Afrikas, iii. p. 168 (1904).

a–d. ♂ ad. Nos. 245, 981. ♀; 905, 931. ♂ ad. Efulen, June and November.

Nos. 329, 330, 657, 660, 692, 699, 1198, 1202, 1211. ♂ ad. et imm.; 1196, 1197, 1199, 1204, 1800. ♀ ad. et imm. River Ja, Dec., Jan., June.

[The food of some of these specimens had been insects, and of others, palm-nuts, *i. e.* the oily fibrous husk. All of those obtained in June 1904 were trapped by natives under palm-trees, where they come to feed on the nuts.

The curious felt-like nests, like those of the Penduline Tit, sometimes found suspended from boughs, are said by all the natives to be nests of this bird or of *Nigrita bicolor*.—G. L. B.]

NIGRITA BICOLOR.

Nigrita bicolor (Hartl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 318 (1890); Reichenow, Vög. Afrikas, iii. p. 167 (1904).

Nos. 128, 418, 887, 913. ♂ ♀ ad. Efulen, June 1902 to July 1905.

Nos. 678, 683, 696, 1295, 1300, 1776. ♂ ad.; 659, 681, 698. ♀ ad. et imm. River Ja, June 1904 to Jan. 1906.

Testes large in male, eggs forming in female.

Nos. 2111, 2127. ♀ ad. Bitje, River Ja, Dec. 1906, Jan. 1907.

The adult male and female are alike in plumage. I notice that, as a rule, the birds from Sierra Leone and thence to the Gold Coast are more of a slaty grey than those from Camaroon, Gaboon, and the Congo.

[Those obtained in June 1904 were trapped under palm-trees, where they had come to peck at the oily husk of the palm-nuts. Some of the others had small larvæ in their stomachs.—G. L. B.]

NIGRITA CANICAPILLA.

Nigrita canicapilla (Strickl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 315 (1890); Reichenow, Vög. Afrikas, iii. p. 170 (1904).

a–f. Nos. 737, 924, 968, 993, 1013, 1044, 1688. juv., ♂ ♀ ad. Efulen, July 22, 1901, to Aug. 1905. "Mbote-fum."

Nos. 608, 666, 716, 1220. ♂ ♀ ad.; 1915. Juv. River Ja, June 1904 to August 1906.

No. 2128. ♂ ad. Bitje, River Ja, Jan. 1907.

[Some of these specimens were trapped under palm-trees and had been eating palm-nuts. Others had been eating small seeds. The bright yellow irides, together with the black under parts and whitish upper parts, give to these little grey birds a very peculiar appearance.—G. L. B.]

NIGRITA LUTEIFRONS.

Nigrita luteifrons Verr.; Sharpe, Cat. B. Brit. Mus. xiii. p. 317 (1890); Reichenow, Vög. Afrikas, iii. p. 168 (1904).

a–d. Nos. 386, 856, 930, 992, 1006, 1032, 1061. ♂ ♀ ad. et imm. Efulen, July 23, 1901, to Aug. 1905. "Mbote-fum."

The female is grey below, not black: it is very likely that my *N. lucieni* is the hen of *N. luteifrons*.

PYTELIA SCHLEGELI.

Pytelia schlegeli Sharpe, Ibis, 1870, p. 482, pl. xiv. figs. 2, 3; id. Cat. B. Brit. Mus. xiii. p. 304 (1890).

Hypargos schlegeli Reichenow, Vög. Afrikas, iii. p. 159 (1904).

No. 191. ♂ ad. Efulen, June 20, 1902, to Aug. 19, 1903.

Nos. 631, 651, 658, 1657, 1660, 1661, 1666, 1711, 1748, 1815–1817, 1827, 1861, 1862. ♂ ♀ ad. et imm. River Ja, June 1904 to July 1906.

Nos. 2039, 2087. ♂ ♀ juv.; 2121. ♂ ad. Bitje, River Ja, Nov., Dec. 1906.

PYRENESTES OSTRINUS.

Pyrenestes ostrinus (Vieill.); Sharpe, Cat. B. Brit. Mus. xiii. p. 252 (1890); Reichenow, Vög. Afrikas, iii. p. 106 (1904).

No. 623. ♂ ad. River Ja, June 4, 1904.
No. 1453. ♂ juv. „ Feb. 22, 1906.

SPERMOSPIZA GUTTATA.

Spermospiza guttata (Vieill.); Sharpe, Cat. B. Brit. Mus. xiii. p. 500 (1890); Reichenow, Vög. Afrikas, iii. p. 102 (1904).

a–f. ♂ ♀ ad. et juv. Efulen, Jan. to May 1902. "Édumvin."

Nos. 263, 625, 640, 855, 1246, 1389. ♂ ad. et juv. River Ja, Jan. 1905 to Feb. 1906.

Nos. 295, 596, 755, 829, 871, 1161. ♀ ad. River Ja, Feb.

Nos. 1427, 1719. ♂; 1728, 1882. ♀ ad. River Ja, June and August.

Nos. 2033, 2457. ♂; 2030. ♀ ad. Bitje, River Ja, Oct., Nov., April.

[The "édumvin" is a quiet little bird; its voice I have never heard. But I have often caught glimpses of it, flitting about in the dense bushes near the ground, in the cleared land and at the edge of the forest, though never in the depths, where probably the seeds on which it feeds do not grow.

A nest said to be that of this bird was shown me in November, and two young ones in it appeared to belong to this species. The nest was placed in the forking twigs of a bush. It was large and jug-shaped, opening at the top; it was made of dry leaves.—G. L. B.]

HYPHANTORNIS CUCULLATUS.

Hyphantornis cucullatus (P. L. S. Müll.); Sharpe, Cat. B. Brit. Mus. xiii. p. 451 (1890).

Ploceus cucullatus Reichenow, Vög. Afrikas, iii. p. 59 (1904).

a. ♂ ad.; *b.* ♂ ad.; *c, d, e.* ♂ juv.; No. 969. ♂ ad. Efulen, May 23, 1901.

No. 25. ♂. River Ja, Jan., May, July. "Nga-a."

Nos. 2445, 2153. ♂ ad. et imm.; 2506. ♀ ad. Bitje, River Ja, April, May, 1907.

[These are the birds that first attract the attention of every stranger coming to this part of Africa. They build in colonies in and around the villages. Their nests are hung from the midribs of banana and palm leaves, and they tear the leaves into shreds for building-material, thus denuding the trees where they build, while the nests are left like huge fruits on the bare branches. The birds live in these nests continually, and are constantly engaged in repairing them. While they work they make an incessant chatter.—G. L. B.]

OTHYPHANTES BATESI, sp. n.

No. 1372. ♀ ad. River Ja, Jan. 29, 1906.

A single female, not quite in full plumage, seems to me to belong to an undescribed species. It has a black crown, and the sides of the head are also becoming black, so that it approaches *O. stuhlmanni*, but it differs from that species in having an uniform green back and wings, with no black streaks or yellow edgings. Throat, chest, and centre of body yellow, flanks and sides of body olive-green. Total length 6·4 inches, culmen 1·65, wing 2·9, tail 2·0, tarsus 0·8.

HETERHYPHANTES NIGRICOLLIS.

Heterhyphantes nigricollis (Vieill.); Sharpe, Cat. B. Brit. Mus. xiii. p. 415 (1890).

Ploceus nigricollis Reichenow, Vög. Afrikas, iii. p. 44 (1904).

a–c. ♂; *d.* ♀ ad. Efulen, Jan. to Dec. 1902. Small "ngas."

Nos. 783, 997, 1069. ♂ ad. et imm. Efulen, June and Aug. 1905.

Nos. 480, 636. ♂; 335, 563, 635, 1317, 1318, 1372, 1430, 1480. ♀ ad. River Ja, Jan. to June.

1573. Juv.; 2101, 2368. ♂ ad. et juv.; 2184, 2260, 2853, 2392. ♀ ad. Bitje, River Ja, Nov. 1906 to March 1907.

The young male is like the old female, and has the same dusky streak above the ear-coverts. The head and neck are slightly washed with olive-yellow.

[This "ngas" is a bird of the old clearings and the neighbourhood of villages, not of the forest. It was very abundant about the villages at the Ja, and old nests were to be seen hanging on the bushes everywhere. These nests are retort-shaped, like those of the village Weaver (*Hyphantornis*), but with a very short entrance, somewhat roughly made and formed of coarse material. Eggs were several times found, but they were certainly eggs of different birds, and the old nests of the "ngas" are apparently used by other species.

The food is insects, especially caterpillars. In hunting insects, birds of this species are not silent, but make a great rustling of leaves among the twigs.—G. L. B.]

PHORMOPLECTES DORSOMACULATUS.

Symplectes dorsomaculatus Reichenow, Orn. MB. 1893, p. 177; id. J. f. O. 1896, p. 31, Taf. iv. fig. 2.

No. 2341. ♂ ad. Bitje, River Ja, Mar. 13, 1907.

Nos. 2438, 2439. ♂ ad. et juv. Bitje, River Ja, April 11, 1907.

This species was described by Professor Reichenow from a female bird. The male closely resembles *P. insignis*, but has the back not so uniformly yellow as the latter, being mottled with black. The chestnut cap of *P. insignis* is replaced in *P. dorsomaculatus* by a yellowish chestnut crown, which fades off on the nape into the yellow of the back. The young bird very closely resembles the adult male, but has no black on the sides of the head and throat.

SYCOBROTUS BICOLOR.

Sycobrotus amaurocephalus Cab.; Sharpe, Cat. B. Brit. Mus. xiii. p. 423 (1890).

Ploceus bicolor (Vieill.); Reichenow, Vög. Afrikas, iii. p. 34 (1904).

Nos. 9, 64, 1449, 1459, 1562, 1605, 1633. ♂ ad.; 1461, 1462, 1563. ♀ ad. River Ja, Jan. to March. "Ngas."

Nos. 1984, 2174, 2325, 2358, 2531. ♂ ad. et juv. Bitje, River Ja, Oct. 1906 to May 1907.

These specimens agree with a male from Buea, Camaroon, received in exchange from the Berlin Museum.

[These specimens were shot in just such places as the common "ngas" (*Heterhyphantes nigricollis*) frequents. Their food had been insects.—G. L. B.]

MELANOPTERYX NIGERRIMA.

Melanopteryx nigerrima (V.); Sharpe, Cat. B. xiii. p. 476 (1890).

Ploceus nigerrimus Reichenow, Vög. Afrikas, iii. p. 50 (1904).

a. ♀ ad.; *b, c.* ♂ juv.; Nos. 814, 1049. ♂ ♀ ad. Efulen, Feb., May, June, August. "Nga'a."

Nos. 20, 21, 616, 1201, 1538, 1824, 1865, 1902. ♂ ♀ ad. et imm. River Ja, Jan., March, June.

Nos. 2000. Juv.; 2284. ♀ juv.; 2347, 2349, 2411, 2484. ♂ ad. et juv.; 2502, 2515. ♀ ad. Bitje, River Ja, Oct. 1906 to March 1907.

[This jet-black bird with conspicuous yellow irides is usually found in colonies of *Hyphantornis*, and makes nests just like theirs. Sometimes they build in colonies of their own, but always very near villages.—G. L. B.]

CINNAMOPTERYX FUSCOCASTANEUS.

Cinnamopteryx tricolor (nec Hartl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 471 (1890).

Ploceus fuscocastaneus (Boc.); Reichenow, Vög. Afrikas, iii. p. 53 (1904).

No. 1014. ♂ ad. Efulen, Aug. 8, 1905.

Nos. 1841. ♂ juv.; 1854, 1855. ♂ ♀ ad. River Ja, July 1906.

No. 2430. ♀ ad. Bitje, River Ja, April 8, 1907.

No. 2626. Juv. Between Kribi and Efulen, July 13, 1907

The young birds are paler chestnut below, and the head and mantle are bright chestnut, with no black on the sides of the face and throat.

MALIMBUS MALIMBICUS.

Malimbus malimbicus (Daud.); Sharpe, Cat. B. xiii. p. 480 (1890); Reichenow, Vög. Afrikas, iii. p. 21 (1904).

a–c. ♂ ♀ ad. et juv. Efulen, March, April 1902. "Ngase-minkan."

d. ♀ imm. Efulen, May 6, 1902.

Nos. 770, 795. ♂ ad.; 793, 821. ♀ ad. Efulen, June 13–30, 1905.

Nos. 1086, 1095. ♀ imm. Zima Country, Oct. 8, 9, 1905.

Nos. 78, 1271, 1308, 1309, 1413, 1414, 1545, 1477, 1602, 1625, 1647, 1789, 1795. ♂ ♀ ad. et imm. River Ja, Jan. to August.

Nos. 2242, 2287, 2437. ♂ ad. et juv.; 2154, 2286, 2293, 2334, 2346. ♀ ad. et juv. Bitje, River Ja, Jan. to April.

On comparing the Camaroon examples with a series from the Gold Coast, it seems to me that two forms have been confounded under the name of *M. malimbicus.* The black of the lores extends on to the fore-part of the cheeks in the Gold Coast bird, which must be called *Malimbus nigrifrons* (Hartl.). In the Camaroons birds the fore-part of the cheeks is crimson, with no black spot at the anterior base.

[This bird seems to be the architect of the very long and finely constructed retort-shaped nests found by the natives hanging from rattan-vines in the forest. I have several times seen the birds about these vines, which the natives call "minkan," whence this bird is named "ngase-minkan," a name they apply, but less appropriately, to other species of *Malimbus.*—G. L. B.]

MALIMBUS RUBRICOLLIS.

Malimbus rubricollis (Swains.); Sharpe, Cat. B. Brit. Mus. xiii. p. 478 (1890); Reichenow, Vög. Afrikas, iii. p. 19 (1904).

a. ♀ imm. Efulen, June 4, 1902.

Nos. 979, 980. ♂ ♀ ad. Efulen, July 22, 1905.

Nos. 2496, 2497. ♀ ad. et juv. Bitje, River Ja, May 1907.

No. 2625. ♀ ad. Between Kribi and Efulen, July 13, 1907.

MALIMBUS CASSINI.

Malimbus cassini (Elliot); Sharpe, Cat. B. Brit. Mus. xiii. p. 482 (1890); Reichenow, Vög. Afrikas, iii. p. 19 (1904).

No. 1048. ♂ ad. Efulen, Aug. 15, 1905.

No. 2514. ♂ ad. Bitje, River Ja, May 16, 1907.

MALIMBUS NITENS.

Malimbus nitens (Gray); Sharpe, Cat. B. Brit. Mus. xiii. p. 481 (1890); Reichenow, Vög. Afrikas, iii. p. 19 (1904).

a, b. ♂ ad. Efulen, Dec. 10–16, 1902. "Ngase-minkan."

c. ♂ ad. „ Jan. 1, 1903.

No. 133. ♀ ad. Efulen, April 18, 1903.

Nos. 152. ♂ imm.; 411, 926, 991, 998, 1059. ♂ ad.; 415, 999, 1058. ♀ ad. Efulen, May 7, 1903, March 31, 1904, April 1, 1904, July 18–28, 1905, Aug. 4–16, 1905.

No. 1111. Ad. Zima Country, Oct. 11, 1905.

Nos. 1924, 1963, 2588. ♂ ad.; 1925. ♀ ad. 25 miles from Kribi, Sept. 1906.

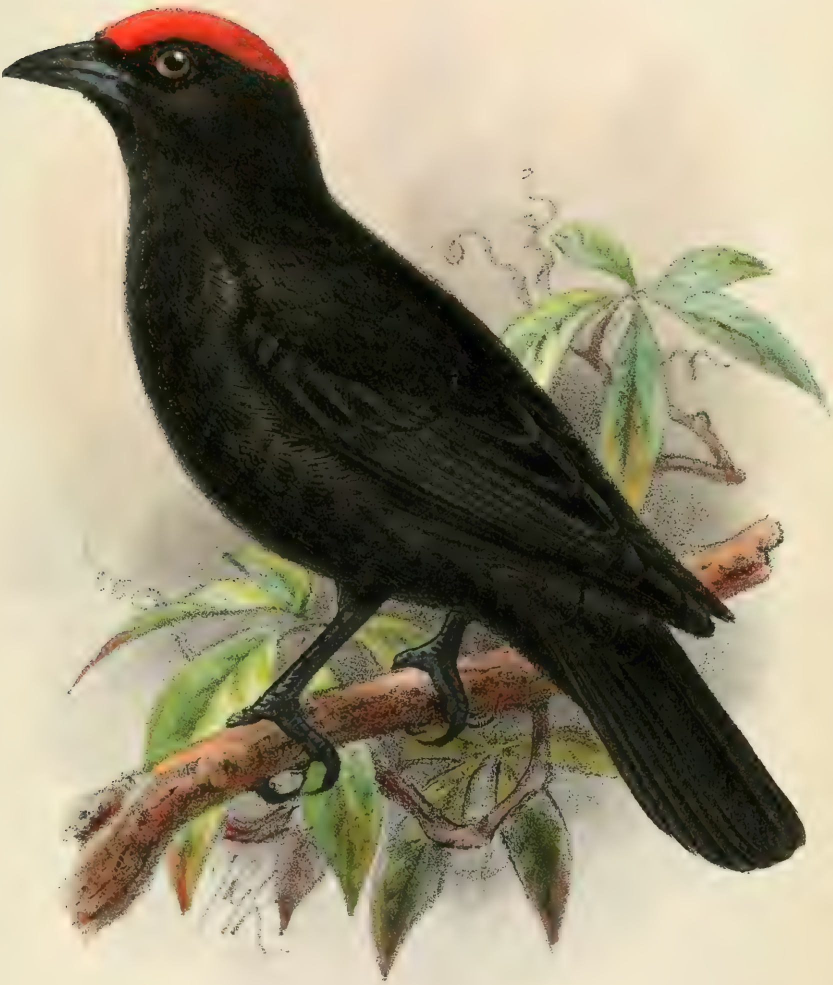
Nos. 2292, 2324. ♀ ad. et juv. Bitje, River Ja, Feb., March 1907.

[The specimen of Jan. 1, 1903, was shot just after it came out of a nest hanging from a limb over the Biwômi River. In the nest was one brown speckled egg, almost ready to hatch, measuring 16 × 24 millimetres. The nest was retort-shaped, rather roughly built, and of coarse material, mainly rootlets. Such nests (old ones) have been frequently seen in the forest, always hanging from boughs over the water.—G. L. B.]

MALIMBUS CORONATUS. (Plate VII.)

Malimbus coronatus Sharpe, Bull. B. O. C. xix. p. 18 (1906).

No. 1864. ♂ ad. River Ja, July 26, 1896. (*Type of species.*)



West, Newman imp.

MALIMBUS CORONATUS.

No. 2244. ♂ ad. Bitje, River Ja, Feb. 8, 1907.

No. 2510. ♂ ad. Bitje, May 11, 1907. Iris brown; feet slate-coloured.

This is a very distinct species. It has no red on the under surface, and is most nearly allied to *M. ruficollis.* It is, however, smaller, and shews only a narrow black frontal band; the sides of the crown and nape are also black, leaving the centre of the crown scarlet.

MALIMBUS RACHELIÆ.

Malimbus racheliæ (Cass.); Sharpe, Cat. B. Brit. Mus. xiii. p. 483 (1890); Sjöstedt, J. f. O. 1892, p. 313; id. K. Sv. Akad. Handl. xxvii. no. 1, p. 83 (1895); Reichenow, Vög. Afrikas, iii. p. 24 (1904).

a. ♀ ad. Efulen, May 26, 1902. "Ngase."

b. ♂ ad. „ Dec. 12, 1902. "Ngase-minku."

No. 153. ♀ ad. Efulen, May 7, 1903. "Ngas."

No. 372. ♀ ad. „ March 14, 1904.

The female shews a scarlet and orange chest-plate like the male, but has a black head. This sex was first discovered by Prof. Sjöstedt.

[Specimen No. 372 was shot in the forest, and was one of several seen accompanying an éjak. They uttered a long-drawn buzzing "chee-ee-ee!" reminding one of the note of the village Weaver (*Hyphantornis*).—G. L. B.]

AMBLYOSPIZA SATURATA, sp. n.

Amblyospiza capitalba (Bonap.); Sharpe, Cat. B. Brit. Mus. xiii. p. 504 (1890), pt.; Reichenow, Vög. Afrikas, iii. p. 101 (1904), pt.

Nos. 1415, 1749, 1813, 1814. ♂ ad.; 1536, 1853. ♀ ad. River Ja, Feb. to July 1906.

No. 2059. ♀ juv. Bitje, River Ja, Nov. 7, 1906.

On comparing this series with a set of skins from the Gold Coast, it is evident that the Camaroon specimens are both larger and darker than the examples from that locality.

The wing of true *A. capitalba* measures 3·2–3·4 inches, and the tail 2·1–2·2 inches. In the Camaroon race the wing is 3·4–3·7 inches, and the tail 2·35–2·5 inches.

The grey under surface is much darker in *A. saturata* than in *A. capitalba*, and in the females the black streaks are much broader on the breast in the form from Camaroon. I propose for it the name of

AMBLYOSPIZA SATURATA, sp. n.

♂. Similis *A. capitalbæ*, sed major et saturatior, pectore et abdomine sordidiore schistaceis distinguenda. Long. tot. 7·5 poll., culm. 0·85, alæ 3·6, caudæ 2·5, tarsi 0·85.

DICRURUS ATRIPENNIS.

Dicrurus atripennis Swains.; Sharpe, Cat. B. Brit. Mus. iii. p. 232 (1877); Reichenow, Vög. Afrikas, ii. p. 651 (1903).

a, b. ♀ ad.; *c, d.* Pull.; Nos. 413, 414, 1047. ♂; 768. ♀ ad. Efulen, Dec., Jan., March, June, Aug. "Ebondi."

Nos. 58, 71, 693, 1349. ♂; 1353, 1369, 1574. ♀ ad. River Ja, Jan. to June 1906.

No. 1084. ♀ ad. Zima Country, Oct. 8, 1905.

No. 1962. ♀ ad. 25 miles from Kribi, Sept. 1906.

No. 2131. ♀ ad. Bitchi, Jan. 30, 1907.

The nestlings are of a very deep sooty black all over, with no greyish shade on the abdomen, and only a slight steel-green gloss on the wings.

[This is one of the most noticeable birds of the forest, from its deep black colour, its active and bold habits, and its loud and rather pleasing notes. It is seen in nearly every *éjak*.—G. L. B.]

DICRURUS CORACINUS.

Dicrurus modestus Hartl.; Sharpe, Cat. B. Brit. Mus. iii. p. 232 (1877).

Dicrurus coracinus Verr.; Reichenow, Vög. Afrikas, ii p. 650 (1903).

No. 1590. ♂ ad. River Ja, March 22, 1906. Testes very large.

No. 2398. ♂ ad. Bitje, River Ja, March 29, 1907.

DICRURUS SHARPII.

Dicrurus sharpei Oust.; Reichenow, Vög. Afrikas, ii. p. 652 (1903).

Nos. 614, 1404, 1578. ♂ ad.; 711, 1579, 1664. ♀ ad. River Ja, March, April, June. Testes large: eggs forming.

Nos. 2163. ♂; 2103, 2418. ♀ ad. Bitje, River Ja, Nov., Jan., April.

[This species has been observed in the small trees of old clearings, and, perhaps, does not venture out into the depths of the forest, where *D. atripennis* is at home.—G. L. B.]

ORIOLUS GALBULA.

Oriolus galbula Linn.; Sharpe, Cat. B. Brit. Mus. iii. p. 191 (1877).

Oriolus oriolus (Linn., 1758); Reichenow, Vög. Afrikas, ii. p. 654 (1903).

a. ♂ juv. Efulen, April 8, 1902.

ORIOLUS NIGRIPENNIS.

Oriolus nigripennis Verr.; Sharpe, Cat. B. Brit. Mus. iii. p. 220 (1877); Reichenow, Vög. Afrikas, ii. p. 661 (1903).

No. 12. ♀ ad. River Ja, Jan. 1903. "Ejakôa."

No. 728. Ad. Efulen. Shot and skinned by a native.

Nos. 2136, 2217. ♂ ad. Bitje, River Ja, Jan. 1907.

ORIOLUS LÆTIOR.

Oriolus lætior Sharpe, Bull. B. O. C. vii. p. xvii (1897); id. Ibis, 1898, p. 155.

Oriolus larvatus lætior Reichenow, Vög. Afrikas, ii. p. 661 (1903).

a, b. ♂ ♀. Efulen, Jan. 2–17, 1902. "Ejakôa."

c. ♂. Efulen, July 10, 1902.

d. ♂. ,, Dec. 29, 1902.

Nos. 875, 914. ♂ ♀ ad. Efulen, July 11, 15, 1905.

No. 1088. ♂ ad. Zima Country, Oct. 8, 1905.

The female is decidedly duller and greener in colour than the male, and does not shew the conspicuous yellow hind-neck so pronouncedly. Some of the males are pervaded with a stain of orange-chestnut over the yellow colour.

Nos. 1180, 1437. ♂ ad. et juv.; 1155. ♀ ad. River Ja, Dec. 1905, Feb. 18, 1906. Testes large.

No. 1641. ♀ ad. River Ja, March 31, 1906. Eggs forming.

No. 2526. ♂ ad. Bitje, River Ja, May 21, 1907.

[This is a bird frequently seen, and still more frequently heard. Its favourite haunts are the tall trees left growing in clearings, but it is also met with in the forest—in fact, it is found wherever there are caterpillars to eat. Its clear, loud, whistling call is imitated in the native name "éja-kôa"; sometimes only a part of these syllables are uttered.—G. L. B.]

PŒOPTERA LUGUBRIS.

Pœoptera lugubris Bp.; Sharpe, Cat. B. Brit. Mus. iii. p. 281 (1877); Reichenow, Vög. Afrikas, ii. p. 705 (1903).

a, *b*. ♂ ad. et juv. Efulen, March 14, 1902.

No. 79. ♂ ad. River Ja, Feb. 1903.

Nos. 1273, 1274. ♂ ♀ ad. River Ja, Jan. 8, 1906. Ovaries granular and testes rather large.

Nos. 1401, 1402. ♂; 1403. ♀ ad. River Ja, Feb. 9, 1906. Eggs being developed and testes large.

LAMPROCOLIUS PURPUREICEPS.

Lamprocolius purpureiceps Verr.; Sharpe, Cat. B. Brit. Mus. xiii. p. 184 (1890); Reichenow, Vög. Afrikas, ii. p. 685 (1903).

Nos. 323, 609, 1174, 1240. ♂ ad. et imm.; 282, 1239. ♀ ad. River Ja, Dec., Jan., and June.

Nos. 819, 904. ♂ ♀ ad. Efulen, June, July.

Nos. 2193. ♂; 2137, 2138. ♀ ad. Bitje, River Ja, Jan. 1907.

[All my specimens of this bird were obtained in the wild fruit-trees of the old clearings around the villages. It is especially fond of the berries of the "Atôndô" tree, whence its native name. It is a silent bird.—G. L. B.]

LAMPROCOLIUS GLAUCOVIRENS.

Lamprocolius glaucovirens Elliot; Sharpe, Cat. B. Brit. Mus. xiii. p. 173, pl. vi. fig. 2 (1890).

Lamprocolius splendidus glaucovirens Reichenow, Vög. Afrikas, ii. p. 693 (1903).

No. 1725. ♀ ad. River Ja, June 8, 1906.

No. 2256. ♂ ad. Bitje, River Ja, Feb. 11, 1907.

PICATHARTES OREAS.

Picathartes oreas Reichenow, Orn. MB. vii. p. 40 (1899); id. Vög. Afrikas, ii. p. 644 (1903).

a. ♀ ad. Efulen, Nov. 27, 1902. "Kup-akok."

b, c. ♂; *d, e, f.* ♀ ad. Efulen, Dec. 1–4, 1902.

g. ♂ ad. Efulen, Jan. 15, 1902.

No. 844. ♂ ad. Efulen, July 5, 1905.

"Kup-akok" = "Fowl of the Rock." Bare skin of head black, skin round eyes slaty blue in front, red behind.

The nest sent home by Mr. Bates is composed of mud and lined with fibre. The egg is not unlike that of a gigantic Nightjar, being white in the ground-colour and mottled with brown all over the shell, with dark grey underlying spots.

The sexes seem to be alike in colour, but the female is a trifle smaller.

[This bird is called by the natives "kup-akok" or "Rock Fowl," from its breeding in rocky places. Its nest is plastered to the side of a rock where there is a projecting shelf above, so as to protect it from rain—in fact, this bird builds in just such places as Swallows use. The natives say that it makes a noise like the cackling of a fowl, but I do not know its note. I have seen one skulking about near its nesting-place, moving with a long, springing hop. The food found in the stomachs was insects, some of them large, and tiny snail-shells. The breeding-places of this bird are in the depths of the forest.—G. L. B.]

XII.—*Notices of recent Ornithological Publications.*

[Continued from p. 195.]

26. *Allen on the Genera and Subgenera of North-American Birds.*

[A List of the Genera and Subgenera of North-American Birds with their Types, according to Article 30 of the International Code of Zoological Nomenclature. By J. A. Allen. Bull. Am. Mus. N. H. vol. xxiv. (1908). 50 pp.]

This is a further excellent disquisition on current questions of nomenclature, so far as they affect birds in the North-American List, and is supplementary to a former paper of Dr. Allen on the same subject (*cf.* 'Ibis,' 1907, p. 634). Its main object is to criticize and explain a new rule (Art. 30) of the Nomenclature-Committee adopted at the International Zoological Congress held at Berlin in 1907, which relates to the mode of selecting the types of genera not originally furnished with a type by the authors. A new article, we are told, embraces "all the provisions of the former one restated in greater detail," and appears to be in the main quite in accordance with Dr. Allen's views.

After an historical *résumé* of the progress of the rules of nomenclature since their initiation by the Code of the British Association in 1842 (which was virtually the work of Strickland), the author devotes several pages to the work done by G. R. Gray, who, in his various 'Lists of the Genera of Birds,' seems have been the first systematist to assign a type for every generic name. This was certainly a great step forward, although Gray made some unfortunate changes in the various editions of his 'List.' Dr. Allen next proceeds to give a complete List of the genera and subgenera of North-American Birds, and to state the "type" of each of them according to the new Code of Nomenclature. We should warn our readers that, if this Code is followed, they must be prepared to accept very startling changes in the names of some of our familiar species. For instance, *Plautus* is to be the generic name of the Great Auk, and "*Vultur*" that of the Condor. The name "*Trochilus*" must be transferred from *T. colubris* to *T. polytmus,* and our well-known Waxwing must be called *Bombycilla,* while *Ampelis* is to be used for the Pompadour Cotinga (*Xipholena pompadora*), which belongs to a totally different family of Passeres. Dr. Allen, however, is not quite prepared to carry out *all* the changes urged upon us by the new school of systematists to the "bitter end." In one special case he allows that "to wrest from certain genera their long recognized types" by the strict enforcement of a technicality would produce serious confusion in nomenclature. We may say that many other of the proposed changes would occasion a similar result.

27. *'Annals of Scottish Natural History.'*

[The Annals of Scottish Natural History. July and October 1907; January 1908.]

In the July and October numbers of our contemporary Mr. Paterson writes the "Report on Scottish Ornithology for 1906." This was a late season, but many species proved more common than usual on the autumn passage, and the year was remarkable in particular for Mr. Eagle Clarke's further discoveries at Fair Isle, such as *Hirundo rufula, Carpodacus erythrinus,* and *Emberiza pusilla*, which are all duly recorded. In this connexion Mr. Clarke's notes in October and January should also be consulted. In the July number Mr. Harvie-Brown tells us of the annual spring migration of the Woodcock in Forth and Clyde, nearly always punctual to the first ten or fourteen days of March, and apparently unparalleled elsewhere. In the occasional notes the Garganey and Garden-Warbler are reported from Shetland, while the Lesser Whitethroat is stated to have bred at Forfar. In October and January Mr. Bahr has an article on birds observed in the Outer Hebrides during May and June 1907, supplementary to that of Mr. Kinnear in the January and April numbers; a prosecution is recorded under the 'Wild Birds' Protection Act'; the Gadwall is stated to have bred in Peebles-shire, and the Great Snipe to have occurred at Fair Isle. In January the Duchess of Bedford gives the results of a visit to the Shetlands, Orkneys, Flannan Isles, and Hebrides in June, and again to the last-named in August; Misses Rintoul and Baxter furnish us with 'Bird-Notes from the Isle of May,' where they were so fortunate as to meet with the Yellow-browed Warbler, the Barred Warbler, the Scarlet Grosbeak, and the Lapland Bunting; and an appreciative obituary notice is given of the late Howard Saunders, whose loss we all feel no less acutely than that of Professor Newton, similarly memorialized in the July number. A good portrait is given is each case.

28. '*The Auk.*'

[The Auk. A Quarterly Journal of Ornithology. Vol. xxiv. Nos. 3, 4 (July and October 1907); Vol. xxv. No. 1 (January 1908).]

These three numbers of our contemporary are largely concerned with the avifauna of special districts. Mr. Cameron writes on the birds of Custer and Dawson Counties, Montana, and in the course of a paper running through all three parts gives a very full account of the species noticed by him during the last eighteen years, with ten plates and two maps. The article is founded on Capt. Thorne's list of 137 species from Fort Keogh, but even now only 19 can be classed as permanent residents. Among the more important details given are the description of the "play" of the Sage- and Sharp-tailed Grouse, the records of the Canada Goose breeding in trees, and the Lazuli Bunting in holes in their trunks, the notes on a great irruption of Phalaropes in May 1899, and others on the habits of the Waxwing and Cedar-bird. In the July number Messrs. Beyer, Allison, and Kopman continue their useful list of the Birds of Louisiana, with comparatively short notes; while in October and January Mr. Bent gives an admirable account of the birds of South-west Saskatchewan, where the flats, with their numerous lakes and islands, are a veritable paradise of water-fowl—especially Ducks,—though these are in some danger of extermination. In July, moreover, Mr. Outram Bangs writes on a collection of skins from Western Costa Rica, obtained by Mr. C. F. Underwood in spring and summer from almost the same ground that G. K. Cherrie worked in autumn and winter, on the Rio Grande de Térraba. Among the 6000 specimens obtained the following are described as new species or subspecies:—*Micrastur interstes*, *Gymnocichla nudiceps erratilis*, *Synallaxis albescens latitabunda*, *Dendrocolaptes sancti-thomæ hesperius*, *Leptopogon pileatus faustus*, *Cyanerpes lucidus isthmicus*, and *Buarremon costaricensis*. *Glaucis hirsuta æneus* is also reinstated, and twelve other birds are stated to be new to Costa Rica. Mr. Ferry has articles in July and October on the birds of extreme Southern Illinois made between Feb. 22nd and 28th and Aug. 10th and 24th, Mr. Seton in January on those of the Great Slave Lake, Mr. Clark on those of Alaska, Mr. Allen on those of the Green Mountains in Vermont, and Mr. Wayne on those of Charleston.

We must not omit, moreover, to mention three papers in January by Messrs. Eifrig, Wood, and Porter on the long-continued migration-period of 1907; an account by Dr. Roberts of a great destruction of Lapland Longspurs in Minnesota and Iowa in 1904; and in other lines Mr. Buturlin's paper on the Blue-throat of Alaska, Mr. Townsend's on Brewster's Warbler, Mr. Peabody's on the Crossbill of Wyoming, Mr. Wayne's on the season of breeding of the Barn-Owl, Mr. Oberholser's on *Agelaius phœniceus arctolegus*, subsp. n. (near *A. fortis*), and articles on Hybrid Humming-birds and Ducks by Messrs. Thayer and Bangs and Mr. Bigelow respectively.

Finally, we must notice Dr. Allen's article on the generic names *Mycteria* and *Tantalus* of Linnæus, 1758, and the account of the twenty-fifth meeting of the A. O. U. by Mr. Sage.

29. '*The Avicultural Magazine.*'

[Avicultural Magazine. The Journal of the Avicultural Society. New series, Vol. v. Nos. 9–12; Vol. vi. Nos. 1–5 (July 1907–March 1908.)]

These numbers contain many papers of great interest to aviculturists, and perhaps a larger proportion than usual of importance to naturalists in general. In July Mr. Pycraft writes on the nestling of *Psephotus multicolor,* and in August on that of *Calopsittacus novæ-hollandiæ* (cuts). In both these members of the family Psittacidæ he finds the tomia of the bill peculiar, and in the latter the feet non-zygodactylous at first. Other Parrots evidently need investigation in these respects. In July Mr. Pocock tells us of the nesting of *Recurvirostra avocetta* in the Zoological Gardens, and gives cuts to shew the nearly straight beak of the chick. In August Messrs. A. & H. Pam review the facts connected with the introduction by them into England of three consignments of Humming-birds (pl.), the food on which they were kept, and the chances for and against their remaining alive. In November Sir W. Ingram records the hatching in his aviaries at Monte Carlo of the chick (pl.) of *Rollulus roulroul,* probably the first ever seen by Europeans. In October Mr. C. Ingram figures the female and a supposed egg of *Paradisea apoda.* In December Mr. R. Phillipps describes a female of *Sericulus melinus* assuming the plumage of the male. In July Mr. Astley writes on polygamy in the *Rhea,* and in December the Duchess of Bedford on the Red-crested Cardinal breeding at large in the park at Woburn.

Besides this there are pleasantly written accounts of Aviculture in Demerara by Mr. Harper (Nov., Dec.) and in Eastern Asia by Mr. C. Ingram; articles are contributed by Mr. L. Seth-Smith on *Guttera cristata* in Unyoro; by Mr. D. Seth-Smith on *Geophaps scripta* and *G. smithi,* and on rearing the young of *Turnix varia*; by Mrs. Gregory on *Psophia crepitans* (pl.); by Capt. Flower on *Pluvianus ægyptius* (pl.); and by Mr. Attewell on *Todus viridis* in Jamaica.

Four articles have coloured plates: therein are described respectively *Querquedula versicolor* (with other species) by Mr. Finn, *Rhinoptilus bicinctus* by Mr. Horsbrugh (from the Modder River), *Sialia sialis* by Mr. Beebe (and also by Dr. Butler), and *Calliste fastuosa* by the last-named. But these are little more than a tithe of the papers which we should be glad to notice if space allowed.

30. *Beebe on Geographical Variation in Birds.*

[Geographic Variation in Birds, with especial Reference to the Effects of Humidity. By C. William Beebe, Curator of Birds. Zoologica: Scientific Contributions of the New York Zoological Society. Vol. i. No. 1. New York, 1907. 8vo. 42 pp.]

It has long been known, says Mr. Beebe in commencing this essay, that many mammals, birds, and reptiles which inhabit a humid region shew a much darker or more increased pigmentation of the hair, feathers, or scales than individuals of the same species from drier localities. Correlated with this variation in colour is often a distinction in point of size of either the body as a whole or of parts of it. Among the best-known examples of this phenomenon in North America in the class of Birds are certain species of *Colinus* and *Melospiza*, of which particulars are given. The more or less regular occurrence of dark-coloured forms among certain wild birds is also well known. Mr. Beebe quotes the case of Sabine's Snipe in Europe, and of the Rough-legged Buzzards (*Archibuteo*) in America as instances, and gives other notable examples *.

After discoursing on various points of this subject, Mr. Beebe gives us an account of some experiments made in the Zoological Park of New York by confining certain birds in a super-humid atmosphere, when "a radical change in the pigmentation of the plumage has been found to take place with each succeeding moult." This is shown especially in some Doves of the genus *Scardafella*, in which individuals thus treated were found to pass into a form more nearly resembling that of a different geographical race than that to which they really belonged. These experiments are certainly of much interest, but should be carried out at greater length, we think, before any definite deductions can be made from them.

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* We do not quite agree that the case of the Black-winged Peafowl (*Pavo nigripennis*) belongs to this category, as the female is quite distinct from that of *P. cristatus* (*cf.* Sclater, Bull. B. O. C. vi. p. xii, 1896).

31. *Braislin on the Birds of Long Island.*

[A List of the Birds of Long Island, New York. By William C. Braislin, M.D. Abstr. Proc. Linn. Soc. New York, 1905–7, p. 33.]

This list of the birds recorded from Long Island has been drawn up by a well-known American ornithologist, who is perfectly familiar with the local Ornis, and has previously published many papers on the subject. After a short description of the Island, which, notwithstanding its proximity to the great city, "has its bays and marshes still famous for waterfowl," and is, moreover, a "frequent resort for waifs of bird-life driven there by storms during migration," Dr. Braislin proceeds to his list, in which he enumerates 364 species (or subspecies), named and arranged according to the American 'Check-list.' Amongst these we notice as rarities *Larus kumlieni, Catharista urubu, Calcarius ornatus, Helminthophila leucobronchialis* and *H. lawrencii* (both supposed hybrids), and our Wheatear, *Saxicola œnanthe,* of which there are several recent records. A "Bibliography" of previous papers relating to the birds of Long Island occupies 22½ pages. A photographic picture is given of an Osprey (*Pandion haliaëtus*) on its nest on Gardiner's Island, where the species is "strictly protected," and is stated to be an "abundant summer resident," and another of a Night-Hawk (*Chordeiles virginianus*) on a chimney in Dr. Braislin's house in Brooklyn, where it was nesting! "The eggs of this bird have been several times discovered on the roofs of houses in Brooklyn."

32. *Dresser on Palæarctic Birds' Eggs.*

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser. Parts XI., XII., 4to, pp. 361–428. London, 1908.]

These two parts of Mr. Dresser's fine work are of somewhat special importance to us as containing accounts of a considerable number of species that wander to our shores at rare intervals, such as various Buntings, Larks, the Rose-coloured Pastor, and the Nutcracker, while those which do not visit Britain—such as *Podoces panderi*—are at least of equal interest.

Much information is given throughout from the notes of Severtzoff, Bogdanoff, Krüper, Radde, Dybowski, Zarudny, and others on the eastern forms.

The letterpress treats of *Loxia bifasciata*, the *Alaudidæ*, the genus *Emberiza*, the *Sturnidæ*, and the *Corvidæ*, so far as they occur in the area under consideration, and these are excellently dealt with in Mr. Dresser's well-known style, but, as usual, the author refuses to recognise many of the subspecies described by other writers. Most of the figures of eggs in the plates come out well, but in the case of the Jay the light has apparently fallen at a wrong angle and spoiled the effect. Only two corrections occur to us—firstly, the note of the Corn-Bunting is not much like that of the Yellowhammer; and, secondly, it is not stated how far the Wood-Lark is a resident in Britain or elsewhere. The woodcuts of nests are pretty, but might with advantage represent those of rarer species.

As regards specific appellations, *Calandrella heinii* is accepted instead of *C. pispoletta*, and *C. apetzii* instead of *C. bætica*.

33. '*The Emu.*'

[The Emu. A Quarterly Magazine to popularize the Study and Protection of Native Birds. Vol. vii. pt. 3, and Supplement. Melbourne: Jan. 1908.]

In Part 3 Mr. R. Hall has a series of "Notes on a Collection of Birds from North-west Australia," in which he has been assisted by the collector Mr. J. P. Rogers. They refer to the Townsend, Kightly, Stewart, and Robinson Rivers and the Obogama district. Mr. A. Mattingley entitles his article, in continuation of that in a former number, "More about Herons," and gives a plate of the nest, eggs, and young of the Nankeen Night-Heron. Col. Legge writes on the location of birds in the Break-of-day district of Tasmania, where the winters are specially severe and the native trees have been replaced by introduced pines. A great part of this number is taken up by the account of the Seventh (Sydney) Session of the Australian Ornithologists'

Union, and the speech of the Vice-President, Mr. A. J. Campbell, on Bird-Protection in the Old World, the subject-matter being taken from the recent Hungarian work of Herr Otto Herman. Portraits are furnished of Col. Ryan and Professor Newton, the latter after that in the periodical 'British Birds.' The Supplement consists of a "Hand-list of the Birds of Australia," by Mr. G. M. Mathews, of Watford (England), who proposes to issue a coloured plate of every species in a future work. Attention should be drawn to certain changes of names made by the writer, in consequence of the discovery of Watling's plates. This list is based on the 'Hand-list' of Dr. R. B. Sharpe.

34. *Forrest on the Fauna of North Wales.*

[The Vertebrate Fauna of North Wales. By H. E. Forrest. London: Witherby & Co., 1907. 537 pp., 28 pls., and map.]

As the author remarks in his preface, North Wales, though unrivalled in its scenery and the home of many rare species, both now and formerly, has been somewhat unfortunate, in comparison with its size, in the number of writers on its Vertebrates. The avifauna alone has received proper attention, and that chiefly in later years and in special districts, though Pennant made an auspicious start towards the end of the eighteenth century. We are therefore truly grateful to Mr. Forrest for satisfying so much felt a want. With the help of a host of contributors, duly commemorated, he has produced an excellent treatise of more than 500 pages, which he modestly terms only a pioneer work. In this he sums up our present knowledge of the fauna, and leaves further details to be added by a future hand: a course in which we fully concur, though it leaves certain species, the Waxwing for instance, much in need of additional records.

The plates, chiefly reproductions of photographs of scenery, are well worthy of the volume, while the first four portray Pennant and his home, Williams, Gregson, Price, Parry, Eyton, Moses, Brockholes, and Gosling, to whom we are indebted for many of the details now gathered together for the first time.

The zoologists of North Wales form the subject of an initial chapter, which is followed by a full bibliography, and this again by a graphic sketch of the physical features of the whole area, which is taken to include the counties of Anglesey, Carnarvon, Denbigh, Flint, Merioneth, and Montgomery. The routes of bird-migration are a separate subject of consideration, and 350 pages are devoted to the species of birds alone, some 250 in number. The list is excellently written and, where necessary, the details are given under the heads of the several counties—a most important point for North Wales, where the distribution of the forms is even now imperfectly apprehended. In conclusion, we may draw attention to the breeding in the district of the White Wagtail, Siskin, and Crossbill, the increase of the Hawfinch and Turtle-Dove, and the interval stated to elapse between the laying of the eggs of the Buzzard. A possible case of the breeding of the Wigeon near Bala is given for what it is worth, while we are informed that there is as yet no certain record of a Twite's nest in the area treated.

35. *Godman's 'Monograph of the Petrels.'*

[A Monograph of the Petrels (Order Tubinares). By F. Du Cane Godman, D.C.L, F.R.S., President of the British Ornithologists' Union, &c., &c. With hand-coloured Plates by J. G. Keulemans. In Five Parts. Part I. Witherby & Co.: December, 1907.]

We have already ('Ibis,' 1907, p. 515) stated the circumstances under which the illustrated work on the Petrels projected by the late Mr. Osbert Salvin and Dr. Godman came to a stop in consequence of Salvin's death, and have announced Dr. Godman's recent determination to complete the work as nearly as possible in the manner in which it was originally planned. The Tubinares, which, besides the typical Petrels, contain the Shearwaters, Fulmars, and Albatroses, had long been one of the favourite groups of Salvin, who prepared in 1896 the well-known account of them contained in the 25th volume of the 'Catalogue of

Birds in the British Museum.' It was the intention of Salvin, after the completion of the last-named work, to issue, in conjunction with Dr. Godman, a series of coloured illustrations of these interesting birds, and at the time of his death (in 1897) many of the plates had been drawn and coloured. Dr. Godman has now resolved to have the series of plates completed, and "to issue them in the form of a Monograph, adding such synonymy and remarks on the geographical distribution of the species as Mr. Salvin had originally intended and bringing the work up to date."

Since 1896, as we are informed in the prospectus, considerable additions to our knowledge of the Tubinares have been made by Mr. Walter Rothschild, who possesses a splendid series of these birds in the Tring Museum, and some remarkable discoveries concerning them have followed from the researches of the American Naturalists on the Pacific coast of North America. The late Sir Walter Buller has likewise contributed much to our information concerning the Antarctic species of Petrels in the "Supplement" to his 'Birds of New Zealand.' This Monograph, however, is chiefly based on the large series of specimens in the British Museum, which now includes the original "Salvin-Godman collection." The Order Tubinares embraces over one hundred species, about one-fourth of which are treated in Part I., which is now before us.

Dr. Godman follows closely the arrangement and nomenclature of the group used by Salvin in his 'Catalogue.' He commences with the Storm-Petrels or typical Procellariidæ, of which family he recognises 24 species belonging to the genera *Procellaria, Halocyptena, Oceanodroma, Oceanites, Garrodia, Pelagodroma, Pealea,* and *Cymodroma.* Besides descriptions and synonyms, all known particulars concerning the life-history and distribution will be found recorded in the letterpress, and excellent coloured figures are given of 19 out of the 24 forms described. When we add that the figures have all been drawn by that excellent ornithological artist Keulemans, and coloured under careful supervision, it will be obvious that neither expense nor trouble has been spared to make the 'Monograph of the Petrels' as perfect as possible.

36. *Hagmann on the Birds of Mexiana.*

[Die Vogelwelt der Insel Mexiana. Von Gottfried Hagmann. Zool. Jahrb., Bd. xxvi. Hft. i. (1907).]

The Island of Mexiana, which helps to block the mouth of the mighty Amazon as it struggles to reach the Atlantic, is classical ground to the ornithologist, as having been one of the collecting-spots of Mr. Wallace when he first went to South America in 1848. Dr. Gottfried Hagmann (lately one of the staff of the Goeldi Museum in Pará) passed three months on it in the autumn of 1902, and made a collection of 242 birds belonging to 97 species. Again, in July 1904, he visited the island, and remained there until January 1906, so that he had excellent opportunities for the study of its avifauna. These opportunities have enabled him to prepare the memoir now before us, in which will be found a complete account of the birds, so far as they are known to us at the present time.

Dr. Hagmann commences with a general description of the island, which lies just under the Equator and is bordered by the sea on the north side. But though it is subject to the ebb and flow of the Atlantic tide the water round it is always fresh, owing to the enormous outpour of the Amazon. As is shown by the well-drawn maps given in the text, Mexiana is of a nearly oval shape, about 55 kil. in length and 28 kil. in breadth. It is of entirely alluvial formation, and hardly anywhere rises more than 1½ metres above the sea-level. The "campo" of the centre of the island is bordered all round by a growth of underwood with very varied vegetation and is mostly covered by grass, interspersed with many patches of wood and numerous palms of different species, besides other fine forest-trees. The island is well watered by numerous streams called *Igarapes*, which rise and fall with the tide, and often form swamps at their junctions. Altogether it is an ideal place for bird-life of every sort.

After a general disquisition on the birds and the various localities which they mostly affect, the author gives a list of the 123 species which have come under his observation in Mexiana, and excellent field-notes on their habits. The species are mostly well-known and of common occurrence, but many new facts are chronicled. After this there follows a comparative table of the birds recorded by Mr. Wallace and the author, embracing altogether 152 species. Five uncoloured plates shew the nesting-sites of *Cacicus persicus* and *Mycteria americana*, the eggs of the latter species and *Gelochelidon anglica*. This Tern arrives in Mexiana in the month of August, and breeds in the swamps in great numbers.

37. '*Journal of the South African Ornithologists' Union.*'

[The Journal of the South African Ornithologists' Union. Vol. iii. No. 2 (Dec. 1907).]

The concluding part of the third volume of our contemporary contains an article on birds observed in Portuguese East Africa by Major Sparrow, and another by Mr. C. G. Davies on those of Port St. Johns, Lusikisiki, Flagstaff, and Bizana, in Pondoland. The first writer, among other items, describes the eggs from a nest of *Helotarsus ecaudatus*; while Mr. Davies records what appears to be *Quelea erythrops* for the first time from South Africa, and corrects the description of the soft parts of *Hapaloderma narina* in Stark and Sclater's work. He also writes on what he thought to be *Cinnyris olivaceus*, but (on p. 215) we are informed that the bird should probably be considered a new subspecies, for which the name *C. olivaceus daviesi* is proposed.

Dr. Gunning describes (on p. 209) a new genus and species of Fringillidæ from the Rustenburg district of the Transvaal as *Heliospiza noomeæ*; Dr. Duerden writes on "The Waltzing Instinct in Ostriches"; and Mr. Haagner begins a full list of recent works and papers on South African Birds.

The action of the Migration and Bird-Protection Committee cannot fail to interest our readers, though it is a new institution in South Africa, and they will also appreciate the obituarial notice of Professor Newton. We may call attention in the last to an error of punctuation (p. 225, l. 31); the semicolon should be after "North America," which gives a different sense to the passage.

38. *Le Souëf's 'Wild Life in Australia.'*

[Wild Life in Australia. By W. H. Dudley Le Souëf, C.M.Z.S., M.B.O.U., &c., Director, Zoological Gardens, Melbourne. With 170 Original Photographs by the author and others. 1 vol., 440 pp. Melbourne: Whitcombe and Tombs, L.]

We have had accounts of the Wild Life of Spain and other less-frequented parts of Europe, but books on the Wild Life of Australia are almost unknown to us. The best of recent volumes on the subject are perhaps Lumholtz's 'Amongst Cannibals' and Semon's 'Australian Bush.' Certainly no one could be better qualified to narrate his impressions in different parts of the Australian Continent than Mr. W. H. D. Le Souëf, the Director of the famous Zoological Gardens at Melbourne, who has visited all the States of the Commonwealth, and has explored some of the most interesting parts of them. In the present book we have chapters on three districts in Victoria, on various localities in New South Wales and the islands in Bass Strait, as well as an account of several visits to Queensland, and finally of a short stay in Western Australia. In all these places Mr. Le Souëf penetrated deep into the most remote forests, and seems to have been most successful in procuring specimens and taking photographs. In his style of narrative Mr. Le Souëf rather reminds us of the late Frank Buckland, passing from one subject to another with great rapidity, and ornamenting his instructive periods with entertaining remarks. Of a large series of photographs, no less than one hundred and seventy, nearly all of which are his own handiwork, are reproduced in the present volume. Many of these are very good, the Australian climate, as we know, being celebrated for its photographic excellence, and many of them are devoted to birds and eggs. The effects of bush-fires in Australia, Mr. Le Souëf says, are often very disastrous. Near Apollo Bay in Victoria, one of his correspondents, who after a heavy bush-fire visited the beach to which it had extended, was astonished to find "hundreds of birds of all sizes and colours lying stranded at high-water mark. The line of dead birds extended more or less thickly for five hundred yards."

The swamps of the Murray in the Riverina district of New South Wales are a favourite resort of water-birds, and we find in Mr. Le Souëf's pages most interesting particulars of their nesting-places, which quite rival those of the Lower Danube in extent and variety. Some of these are well illustrated in the photographs, as is also the remarkable nest of the "Grey Jumper" or "Twelve-Apostle-bird" (*Struthidea cinerea*) met with in the same district.

But perhaps the most entertaining part of Mr. Le Souëf's volume is his account of his adventures in Queensland. Here, besides many other rarities, he found and photographed the nesting-place of the Beautiful Parrakeet (*Psephotus pulcherrimus*), the only Parrot in Australia that does not build in hollow trees. It excavates a hole into the mound of the termites and forms an egg-chamber in the centre. Here also he found the extraordinary "playground" of the rare Tooth-billed Bower-bird (*Scenopæus dentirostris*).

Mr. Le Souëf's 440 pages are replete with similar anecdotes of wild life in different parts of Australia, and all who take any interest in that wonderful Continent will, we are sure, read them with pleasure.

39. *Lönnberg's Edition of Linnæus's 'Methodus Avium Sveticarum.'*

[Caroli Linnæi Med. Botan. & Zoolog. cult. Methodus Avium Sveticarum, sive Enumeratio avium fere omnium quæ in tota svecia reperiuntur, secundum novam et naturalem a rostro desumptam methodum in classes distributa; ita ut cuilibet generi proprius character, unicuique speciei vera differentia adsignata reperitur. Utgifven af Einar Lönnberg. Upsala, 1907. 96 pp., 1 pl.]

Professor Lönnberg has sent us a copy of his reprint of this well-known work of Linnæus, which will be most useful to ornithologists, and especially to those interested in European birds and their nomenclature. He has, moreover, added a preface and notes on the book itself.

40. *McGregor on various Philippine Birds.*

[(1) Notes on a Collection of Birds from the Island of Basilan, with Descriptions of Three new Species. By R. C. McGregor. Philipp. Journal of Science, vol. ii. p. 279.

(2) Descriptions of Four new Philippine Birds. *T. c.* p. 292.

(3) The Occurrence of Blyth's Wattled Lapwing and the Scaup Duck in the Philippine Islands. *T. c.* p. 295.

(4) Note on a Bird unrecorded from Mindanao. *T. c.* p. 296.

(5) Notes on Specimens of the Monkey-eating Eagle (*Pithecophaga jefferyi* Grant) from Mindanao and Luzon. *T. c.* p. 297.

(6) Notes on Birds collected in Cebu. *T. c.* p. 298.

(7) Birds observed in Bantayan Island, Province of Cebu. *T. c.* p. 310.

(8) The Birds of Bohol. *T. c.* p. 315.

(9) The Birds of Batan, Camiguin, Y'ami and Babuyan Claro, Islands North of Luzon. *T. c.* p. 337.]

These and other papers not mentioned in the present list shew that our American friends are working hard at the ornithology of the Philippines—a subject which presents many curious problems in geographical distribution and is well worthy of careful study. We have nine papers by Mr. McGregor, besides others by Mr. Worcester and Major Mearns, now before us.

The first paper relates to the collections made in Basilan by the taxidermists of the Philippine Bureau of Science, from December 1906 to March 1907; they contained examples of 29 species new to the island. Of these, one (*Thriponax multilunatus*) is described as new to science and two others (*Pitta fastosa* and *Orthotomus mearnsi*) are separated from their relatives in Mindanao, with which they had been previously united.

The second paper contains descriptions of four new Philippine birds:—*Turnix celestinoi* (Bohol), *Zosterornis affinis* (Luzon), *Pardaliparus albescens* (Ticao), and *P. edithæ* (Calayan).

In the third paper the occurrences of an Asiatic Plover (*Microsarcops cinereus*) and of the Scaup-Duck (*Fuligula* *marila*), not previously recorded from the Philippines, are noticed, and in the fourth the presence of *Rhabdornis inornata* in Mindanao.

Mr. McGregor in his fifth paper gives us some more information about the great Monkey-eating Eagle of the Philippines (*Pithecophaga jefferyi*). Two more specimens have been secured in Mindanao and one in Luzon. Next follow notes on the birds of Cebu, which has no less than 10 peculiar species, and is pronounced to be the most anomalous island of the archipelago.

In the seventh paper the author discusses the birds of Bantayan Island, collected by himself and his assistants in 1906, and refers them to 66 species. They shew that this island belongs to the group of the Central Philippines and not to Cebu, although the latter island is only eight miles off.

The Island of Bohol, of which the birds are discussed in the eighth paper, was visited by Mr. McGregor and his assistants in 1906, when valuable collections were made. The result of their examination confirms Mr. Worcester's prior opinion that its Avifauna is allied to that of Leyte, and not to that of Cebu. It is shown that 11 genera characteristic of Bohol are not represented in Cebu, while such as are common to the two islands have well-marked representative species. Mr. McGregor gives a complete list of the birds of Bohol and describes four as new—namely, *Phabotreron albifrons, Otus boholensis, Zosterops læta,* and *Eudrepanis decorosa.*

The last paper of the series relates to the birds of Batan, Camiguin, and other small islands north of Luzon. Here many ubiquitous Philippine species (such as *Oriolus chinensis, Sarcops calvus*, and *Pycnonotus goiavier*) are wanting and the families Psittacidæ, Picidæ, Dicæidæ, and Nectarinidæ are unrepresented. Mr. McGregor gives us lists of the birds of the two largest islands Batan and Camiguin, amongst which are seven species described as new—namely, *Sphenocercus australis, Terpsiphone nigra, Camiguinia personata, Hypsipetes camiguinensis, Hyloterpe illex, Zosterops batanis,* and *Z. meyleri. Camiguinia* is a new genus of Flycatchers allied to *Cyanomyias.*

41. *Mearns on Philippine Birds.*

[(1) Two Additions to the Avifauna of the Philippines. By E. A. Mearns. Philipp. Journal of Science, vol. ii. p. 353.

(2) Descriptions of a new Genus and Nine new Species of Philippine Birds. By E. A. Mearns. *T. c.* p. 355.]

In the first paper Major Mearns adds two species to the List of Philippine birds, viz. *Butorides spodiogaster* (Palawan) and *Spodiopsar cineraceus* (Luzon). In the second he describes a new genus and nine new species belonging to the Philippine Ornis—namely, *Malindangia macgregori* (Mindanao), *Centropus carpenteri* (Batan), *Cyornis mindorensis*, *Rhipidura hutchinsoni* (Malindang), *Hypsipetes batanensis*, *Merula malindangensis*, *M. mayonensis*, *Geocichla mindorensis*, and *Zosterops halconensis* (Mindoro). The new genus *Malindangia* belongs to the Campophagidæ.

42. *Menegaux on the Birds of the French Antarctic Expedition.*

[Expédition Antarctique Française (1903-1905) commandée par le Dr. Jean Charcot. Sciences Naturelles; documents scientifiques. Oiseaux par A. Menegaux, Assistant au Muséum d'Histoire Naturelle. 4to, 80 pp., 13 pl. Paris: Masson, 1907.]

This is one of a series of memoirs on the scientific results of the French Antarctic Expedition of 1903–5, which was under the command of Dr. Jean Charcot. The expedition wintered at Wandel Island, near the eastern extremity of Gerlache Strait, on the shores of Graham's Land in 65° S. lat. About 150 birds in skins, besides eggs and spirit-specimens, were brought home. These are referred by the author to the following 20 species :—

1. Pygoscelis papua.
2. „ adeliæ.
3. „ antarctica.
4. Phalacrocorax atriceps.
5. Sterna vittata.
6. Larus dominicanus.
7. Megalestris antarctica.
8. Oceanites oceanicus.
9. Thalassœca antarctica.
10. Priocella glacialoides.
11. Majaqueus æquinoctialis.
12. Pagodroma nivea.
13. Ossifraga gigantea.
14. Daption capensis.
15. Prion desolatus.
16. Phœbetria fuliginosa.
17. Diomedea exulans.
18. „ melanophrys.
19. „ chlororhyncha.
20. Chionis alba.

Full details are given respecting the nesting of nine species which were found breeding on Wandel Island. This is specially the case as regards the three Penguins, the eggs of which supplied the members of the expedition with excellent and abundant food. Copious field-notes concerning all the birds met with are supplied by Dr. Charcot and other members of the expedition.

A well-drawn series of 13 plates illustrates the life and habits of the Penguins and other birds observed, and a chart shews the exact position of "rookeries" of Penguins and Cormorants on Wandel Island and the adjoining islands on the coast of Graham-land.

43. *Mullens on Gilbert White.*

[Gilbert White of Selborne. A Lecture delivered before the Hastings and St. Leonards Natural History Society. By W. H. Mullens. London: Witherby & Co., 1907. 32 pp.]

This reprint of Mr. Mullens's lecture will be found most useful by all who need a concise account of the great naturalist of Selborne and his work. Well-written, carefully compiled, and with several illustrations, it is a model of compression, and is, moreover, furnished with a full list of the different editions of White's chief work. A facsimile is given of the titlepage of the first of these, while the subject is treated under the heads of the author, the village, and the book itself.

44. *Ogilvie-Grant on the Birds of the Gunong Tahan Expedition.*

[Narrative of the Gunong Tahan Expedition. Birds: by W. R. Ogilvie-Grant. Journ. Malay States Museums, vol. iii. pp. 1–57, pls. ii. & iii.]

It is evident that there is still much to be done—as regards birds, at any rate—in the mountains of the Malay Peninsula. The explorations of Messrs. Wray and Robinson on Gunong Tahan in the northern border of Pahang and the adjoining ranges have produced results of the greatest interest. The close affinity between the highland-faunas of the Malay Peninsula and those of Sumatra and Borneo is clearly demonstrated by the collection described in the present memoir, in which 175 species are enumerated. Seven of these appear to represent undescribed forms—a remarkable Jay (*Cissa robinsoni*), a White-eye (*Zosterops tahanensis*), a Short-wing (*Brachypteryx wrayi*), a small Flycatcher (*Muscicapula malayana*), a very dark-coloured and quite distinct Green Woodpecker (*Gecinus robinsoni*), a small Owl (*Heteroscops vulpes*), and a very distinct Green Fruit-Pigeon (*Sphenocercus robinsoni*). These novelties have been already characterized in the Bulletin of the B. O. C. Among other birds of interest special attention is called to *Syrnium maingayi* (a very rare Wood-Owl), *Rheinardtius nigrescens* (the Malayan representative of the Crested Argus), and *Polyplectron inopinatus* (the beautiful Peacock-Pheasant lately described by Mr. Rothschild). Many good field-notes are supplied by Mr. Robinson and distinguished by his initials. The Malayan Bullfinch (*Pyrrhula waterstradti*) was found to be by no means uncommon on the moorland-zone of Gunong Tahan, but was wild and difficult to approach.

Figures are given of *Gecinus robinsoni*, *Cissa robinsoni*, and *Heteroscops vulpes*.

45. ‘*Ornithologisches Jahrbuch*’ *for* 1907.

[Ornithologisches Jahrbuch. Organ für das palaearktische Faunengebiet. Herausgegeben von Victor, Ritter von Tschusi-zu-Schmidhoffen. xviii. Jahrg. 1907.]

We have to thank the Editor for a copy of this Journal, which is regularly sent to us. The three parts last received complete the eighteenth volume. Although we have frequently noticed separate papers extracted from it, we now wish to call attention to its importance, as a whole, to the student of palæarctic ornithology, a subject to which it is specially devoted. It contains many articles relating to the birds of Eastern Asia and South-eastern Europe. There are also in every number notices of papers, little known in England, from which much information may be obtained.

We commend this journal to those who can read German, as containing a mine of information on the birds of the Palæarctic Region. In the numbers now before us there are papers on the birds of Krasnojarsk by Herr Johansen of Tomsk, and the first part of an article on those of the island of Lesina, in the Adriatic, by Dr. G. Schiebel, besides one on the birds of Semiretsch (by Baron Loudon) which has been already noticed (see above, p. 184).

46. *Parrot on the Birds of Banka and Sumatra.*

[Beiträge zur Ornithologie Sumatras und der Insel Banka, mit besonderer Zugrundelegung der von Dr. Hagen auf Banka gesammelten Vögel. Von Dr. C. Parrot. Abh. k. Bayer. Ak. d. Wiss. ii. Kl. xxiv. Bd. i. Abt.]

This memoir is based primarily on a collection of birds made in the island of Banka by Dr. B. Hagen, of Frankfort-a.-M., and presented to the Munich Museum, but some other collections have been incorporated, and the result is a complete memoir on the birds of Sumatra and Banka.

The number of species and subspecies attributed to Sumatra by Dr. Parrot is 132 (see correction, p. 286) and to Banka 60. The author, who claims to belong to the "new school" of systematists, considers that all species belonging to the same "*Formen-complex*" ought to be classed as subspecies. He therefore provides nearly all his species with three names, so that many of what old-fashioned ornithologists would consider to be quite distinct species are here degraded to subspecific rank, and have a third name tacked on to them. Under these circumstances species and subspecies must be added together when comparing the Ornis of the two islands.

The following new names appear to be used for the first time in this memoir :—*Megalæma hæmacephala delica*, *Rhamphococcyx curvirostris singularis* (Sumatra), *Ceyx rufidorsa robusta* (Sumatra), *Sitta frontalis hageni* (Banka and Java), *Treron nipalensis harterti* (Sumatra), and *Turtur tigrinus minor*) Sumatra). *Pitta atricapilla rothschildi* is based on a single specimen from Marunduque, Philippines, in the Tring Museum, but the author seems to have some doubt about its validity.

47. *Parrot on some Central Asiatic Birds.*

[Filchner, Expedition China-Tibet. Zool.-Botan. Ergebn. 3 Aves, bearbeitet v. Carl Parrot.]

A small collection of imperfectly preserved skins sent to the Munich Museum by Herr Filchner from the confines of China and Tibet has been examined by Dr. Parrot, who refers the specimens to 16 species. Of these *Erithacus auroreus filchneri,* from Kin-tschou, is described as a new subspecies. An adult male pheasant from the Tsing-Ling Mountains is referred, with some doubt, to *Ph. holdereri* of Schalow (J. f. O. 1901, p. 414, pl. iv.). Two specimens of *Ibidorhynchus struthersi* are from Hsiau and the Tsinling Mountains.

48. *Robinson on Malay Birds.*

[A Hand-list of the Birds of the Malay Peninsula, South of the Isthmus of Kra. By Herbert C. Robinson. Journ. Fed. Malay States Museums, ii. pp. 66–83.]

Six hundred and sixteen species are recorded in this list, with subjoined notes on the localities where the rarer forms are found, and marks of distinction to shew in which Museum examples are to be seen. The article should be of great use, as no such general list of this Avifauna has been published since Hume wrote in 'Stray Feathers' (viii. pp. 37, 151, and ix. p. 107) in 1879–1880.

49. *Salvadori on Birds from Lake Moero.*

[Collezione di uccelli nelle vicinanze del Lago Moero nell' Africa centrale, raccolti del Dott. Ascenso. Per T. Salvadori. Boll. Mus. Zool. Torino, vol. xxii. no. 370 (1907).]

Count Salvadori gives an account of a small collection of birds made in Congoland, at Luconzolwa, a post a little to the west of Lake Moero, by Dr. Ascenso. The collection contained 96 skins, which are referred to 60 species. Two of these are described as new—*Psalidoprocne pallidigula* and *Macronyx ascensi.*

50. *Scharff's 'European Animals.'*

[European Animals, their Geological History and Geographical Distribution. By R. F. Scharff, Ph.D., B.Sc. London: Constable & Co., 1907. 1 vol. 8vo, 258 pp.]

In 1907 Dr. Scharff was invited to deliver the "Swiney Lectures" at South Kensington, and took for his subject the important theme which forms the title of the present work. The book is, in fact, entirely based upon his lectures. Although Dr. Scharff has selected most of the facts put forward in its course from Mammals, Mollusca, and Insects and has made but few references to the Class of Birds, we may venture to bring his volume to the notice of ornithologists as one on a subject of great general interest to the naturalist. We think, however, that in such a work much more might have been said about the Birds of Europe and the problems which their study presents to us.

In the first place, it might have been mentioned that our so-called "Continent" of Europe is but a fragment of the great "Palæarctic Region," which embraces the whole of Northern Asia, and that the northern strip of Africa, which is discussed mainly under the title of "Mediterranean Region," most certainly belongs to the same great primary division, of which it is nothing more than a "Subregion." This would have shown more exactly how the European Fauna is related to that of the rest of the world.

Amongst the bird-topics mentioned is the possibility recognised by some authorities of small embryo animals and seeds being carried about by birds on their feet on migration, which, however, does not seem to be supported by any sufficient evidence. The so-called "irruptions" of birds in large numbers into distant areas, as in the cases of Pallas's Sandgrouse and the Nutcracker, are also alluded to. The phenomenon of "discontinuous distribution" presented by *Cyanopica cyanea* and *C. cooki* is commented upon. But no mention is made of the still more strange case of the Corsican Nuthatch (*Sitta whiteheadi*) being more nearly related to *Sitta canadensis* of North America than to any Nuthatch of the Old World *. The author has, however, provided us with excellent instances of the facts of distribution in other branches of the Animal Kingdom, and has illustrated them with very clearly drawn maps, from which there is much to be learnt.

We can, therefore, commend Dr. Scharff's volume to all students of Geographical Distribution as well worthy of their attention.

51. *Shufeldt on the Osteology of* Sarcops.

[Osteological and other Notes on *Sarcops calvus* of the Philippines. By R. W. Shufeldt. Philipp. Journal of Sc. ii. p. 257 (Oct. 1907).]

Having received specimens of *Sarcops calvus* from the Bureau of Science at Manila, Dr. Shufeldt gives a description of the skeleton of this remarkable form, but, apparently from want of material for comparison, does not come to any definite conclusions as to its nearest allies, except that it possesses the general characters of the Passeres, and in different aspects those of the Corvidæ, Sturnidæ, and Oriolidæ. A figure of the whole skeleton is annexed.

52. '*Transactions of the New Zealand Institute.*'

[Transactions and Proceedings of the New Zealand Institute, 1906. Vol. xxxix. Wellington, N.Z., 1907. 8vo, 573 pp.]

There can be no doubt that the Naturalists of New Zealand have suffered a great loss by the death of Sir Walter Buller, and it is quite right that the present volume should be headed by his portrait and a memoir on his career and good work. His last publication, the second volume of the 'Supplement to the Birds of New Zealand,' was only just finished at the time of his decease.

In the thirty-ninth volume of the 'Transactions of the

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* *Cf.* remarks in 'The Ibis,' 1906, p. 196.

New Zealand Institute' there are five papers that claim our attention. Two of these relate to the much-vexed question of the carnivorous habits of the Kéa (*Nestor notabilis*). One of them is by Dr. Benham, the Professor of Biology in the University of Otago *, the other by Mr. Marriner †. Anyone who is interested in this subject and will read these articles, both of which have been carefully prepared and are based on the evidence of fully trustworthy witnesses, will be convinced, we think, that the case has been fully proven against the Kéa, and that this Parrot in certain localities in the Southern Island of New Zealand is frequently guilty of sheep-murder. There can be no doubt, as Prof. Benham says, that this is an excellent illustration of the fact that "variation in habit, as well as in structure, occurs in nature."

Two other articles in the volume now before us are by Mr. J. Drummond (*op. cit.* pp. 227, 563), and relate to the birds introduced of late years into New Zealand, some of which bid fair in process of time to supersede the native species. On this, an also much-debated question, there is not so much unanimity of opinion. Mr. Drummond, who discussed the subject at some length, admits that the evidence which he has collected from a large number of observers by a series of 28 questions is confusing, but in some cases, such as that of the Sparrow, the "mass of evidence is entirely against the bird." The Skylark, we are surprised to find, is also much objected to by some of the witnesses, and so is the Greenfinch, while the Starling is almost universally approved. No less than 23 species, mostly well-known "British Birds," appear to have been "naturalized and established" in New Zealand.

The fifth ornithological paper records an instance of the occurrence in New Zealand of the Australian Spoonbill (*Platalea regia*), which, however, can be regarded only as an occasional straggler.

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* "Notes on the Flesh-eating Propensity of the Kéa," *op. cit.* p. 71.

† "Notes on the Natural History of the Kéa, with Special Reference to its reputed Sheep-killing Propensities," *op. cit.* p. 271.

53. *Van Oort's 'Osteological Catalogue.'*

[Catalogue Ostéologique des Oiseaux. Par E. D. Van Oort. Mus. d'Hist. Nat. des Pays-Bas. Tome x. première partie. Leiden, 1907. 8vo, 384 pp.]

This is a catalogue of the osteological specimens of birds in the National Museum at Leyden. It enumerates 3300 skeletons, 56 parts of skeletons, and 446 craniums, representing altogether 1794 species. It will be useful for naturalists who are working on the osteology of birds. It follows generally Sharpe's 'Hand-list of Birds' in nomenclature and Gadow's systematic arrangement. There are 14 plates of skeletons taken from photographs.

54. *Von Ihering on the Birds of Brazil.*

[Catalogos de Fauna Brazileira editados pelo Museu Paulista, S. Paulo, Brazil. Vol. I. As Aves do Brazil, pelo Prof. Dr. Hermann Von Ihering, Director do Museu Paulista, e Rodolpho Von Ihering, Custos do Museu Paulista. 1 vol. 8vo, 486 pp. São Paulo, 1907.]

This is the first of a series of "Catalogues" (somewhat after the fashion of the American 'Check-list') which has been planned by Dr. Hermann von Ihering, the Director of the Museu Paulista at São Paulo. The series will contain a synopsis of the Brazilian species of the successive groups of animals treated of in the various volumes. In preparing the present volume Dr. von Ihering has been aided by his son Rodolpho von Ihering, who, during his father's temporary absence, is in charge of the Museum.

The work enumerates the titles of all the birds as yet known, on good authority, to have been met with within the confines of Brazil, 1559 in number, to which a certain number of "addenda" are made at the close of the List. After the name under each species is given a reference to the authority for its occurrence in Brazil, a short account of its distribution, and a record of the exact localities from which specimens have been received by the Museu São Paulo. This is, indeed, a very useful piece of work, and will be of great assistance to naturalists who are studying the large and varied Fauna of Brazil. If we understand the plan correctly, it is hoped to base a larger and more extensive account of each of the different branches of the Brazilian Fauna upon these Catalogues.

In his introduction Dr. von Ihering gives us a sketch of the various authors who have written on the birds of Brazil from the days of Piso and Marcgrave (1648) to the present time. It is an illustrious company, full of well-known names, which we need not now repeat, but perhaps Natterer and v. Pelzeln are pre-eminent above all of them. The author also touches upon the difficult question of the natural zoo-geographical divisions of Brazil, and gives us an outline-map to shew them more clearly. He calls the three principal provinces "Amazonica," "Araxana," and "Tupiana," and makes some subprovinces in each of them. No doubt he will hereafter discuss this very interesting problem at greater length.

The following names in the List appear to relate to species or subspecies previously undescribed :—*Dendrocolaptes plagosus turdus*, *Gurucara* (gen. nov. Tyrannidarum) *difficilis*, *Phylloscartes paulista*, *Emberizoides macrourus itarareus*, *E. m. ypirangensis*, and *Monasa nigrifrons itapurana*.

55. *Worcester on the Nesting of some Philippine Birds.*

[On a Nesting Specimen of *Caprimulgus griseatus*, and on a Nesting-place of *Sula sula* and *Sterna anæstheta*. By Dean C. Worcester. Philipp. Journ. Sci. ii. no. 5 (Oct. 1907).]

Mr. Worcester (in the Philippines) nearly rode over a nesting-place of *Caprimulgus griseatus* on May 29th, 1907, where one of the parent birds was sitting on two eggs. He now figures the nesting-place, and remarks on the difficulty of distinguishing the bird from the surrounding sand, gravel, and stones. On the Dedicas rocks, north of Camiguin in the Philippines, large numbers of Boobies (*Sula fiber*) and Terns (*Sterna anæstheta*) were met with, and it is assumed as probable that both these species were breeding there.

XIII.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "To the Editors of 'The Ibis'":—

Sirs,—In reply to your enquiries, I have pleasure in informing you that I found the two eggs of the Standard-winged Nightjar (*Macrodipteryx longipennis*), which I presented to the British Museum *, near a small town named Ikere, fourteen miles N.E. of Ibadan, in the Western Province of Southern Nigeria. There were only two eggs in the nest, and I should say that this is the usual number of the clutch, as the hen had just begun to sit. The nest was very primitive, consisting of a few dried grasses, fashioned into a nest on the bare ground, which in this case was on the site of a deserted farm. The hen bird sat very closely, and I almost trod on her, as her plumage very nearly corresponded with the ground. When she flew off, I found that she had not got any pennants to her wings, and from frequent observations I have come to the conclusion that it is only the male bird which has the peculiar flag-like pennants on its wings. These birds are rarely seen in the daytime, unless disturbed from their quiet dark day-resorts, but they are very common after sunset till dark.

Yours &c.,

Jan. 11th, 1908.

J. H. J. Farquhar

(Assist. Conservator of Forests,
Southern Nigeria).

Sirs,—By the outgoing mail I am sending you a skin of what I believe to be *Glareola pratincola* and a clutch of two eggs. These birds were nesting in hundreds on the ploughed land of the estate of Mr. Alfred Platt, Isipingo, Natal, which is on the south coast, about twelve miles from Durban. The eggs were laid on the bare ground, mostly on hard dark soil, which had been pecked up by the birds into small pellets, and the nests were placed on the ridges between the ploughed furrows. The eggs are so closely similar to the surroundings that an experienced eye is needed to find them, notwithstanding that they are exposed on the bare ground. The birds tried all manner of antics to entice me away from their eggs. At one time they were observed sprawling with their wings outstretched, then fluttering on the ground with legs extended, or running about close by and feigning lameness. It was most amusing to watch their clever devices to lead me away from their nests. My object in sending the specimen is owing to some doubt existing in my mind as to which Pratincole it is. In Sclater's book (Faun. S. Afr., Birds, vol. iv. p. 333) *Glareola pratincola* is described as an "accidental visitor to South Africa"; he also says that the "iris is blue with eyelids coral-red"; whereas these birds were nesting in hundreds, and, to make sure of identification, I shot six specimens. They all had brown irides and no coral-red eyelids; besides which the females are distinguishable from the males by the black line on the throat being not so clearly defined, while the plumage is duller and the outer tail-feathers less prolonged. All the birds had the under wings-coverts chestnut, as is clearly observable when they fly past, and there were none of the other Pratincoles in the neighbourhood. I saw thirteen nests, all of which contained two eggs each, mostly fresh: this was on the 16th of November last. I shall be glad to know whether the skin sent is that of *G. pratincola*.

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* *Cf.* 'Ibis,' 1907, p. 655.

Yours &c.,
D. Millar.

Durban, Natal,
Dec. 9th, 1907.

[We have examined the skin sent, which is certainly that of *G. pratincola*, not *G. melanoptera*. It is remarkable that it should breed in Natal, as well as in Southern Europe.—Edd.]

Sirs,—When writing of *Geocichla varia* ('Ibis,' above, p. 132) I should have mentioned that Mr. Heatley Noble exhibited a nest, bird, and eggs of this species at a meeting of the B. O. C. on Feb. 21st, 1900 (Bull. B. O. C. x. p. xlvii). These were obtained in the first place (along with others) from Mr. Alan Owston, of Yokohama, who had received them from his native collectors. It appears that the above-mentioned bird had been snared on the nest. On May 21st, 1899, Mr. Owston's brother—Mr. Francis Owston—shot a male White's Thrush on a nest containing two young birds and an egg, but the egg was unfortunately broken by the shot. The fragments of this shell, together with the nestlings (preserved in spirits), were sent to Mr. Heatley Noble. One of these young birds Mr. Noble has very generously presented to the Natural History Museum, while the nest referred to in my paper (above, p. 132) was also a gift from that gentleman.

With regard to the bibliography of Japanese birds, I omitted to refer to the several pamphlets or annotated "lists" printed privately by Mr. Alan Owston in Yokohama. Although they contain notes of the briefest description, in consideration of the author's wide experience of Japanese ornithology they are of very great interest, and, moreover, unacknowledged quotations have frequently been made from them.

Yours &c.,
Collingwood Ingram.

Tetbury, Glos.,
February 27th, 1908.

The Hobart Museum, Tasmania.—We are pleased to be able to announce that Mr. Robert Hall, of Melbourne, who, in 1903, made the enterprising ornithological journey to the Lena described in this Journal ('Ibis,' 1904, p. 415), and is well known to us by other writings, has been appointed to succeed the late Mr. Alex. Morton as Curator of the Hobart Museum, Tasmania. Mr. Hall writes to us that he would take up his new post at Hobart on the 1st of January, 1908.

The Naardermeer.—Mr. F. E. Blaauw has kindly sent us a copy of the Report of the newly founded Dutch Society for "the preservation of Nature's Monuments in the Netherlands' (see Bull. B. O. C. xix. p. 38) From it we gather that the acquisition of the Naardermeer has been quite a success financially, so that the interest due on the money borrowed for its purchase is paid without much difficulty. The financial administration of the Naardermeer is kept separate from that of the rest of the Society's finances.

We are sorry to find that no details are given of the breeding and general welfare of the Spoonbills and other birds in that interesting resort.

An attempt has been made to buy a part of the island of Texel which was most frequented as a breeding-place by interesting birds. This attempt has failed, owing to the necessary money not forthcoming. It is, however, gratifying to hear that the present owner has promised to protect the birds as much as he can.

The Report closes with information for intended visitors to the Naardermeer. From it we understand that, as a rule, admission will be given only to Members of the Society, and that only once a year. For this they must apply to the President.

Mr. Douglas Carruthers's Expedition to Turkestan.—Mr. Carruthers, who left England last autumn to join Mr. W. R. Rickmers in Samarkand, Russian Turkestan, writes to us (on Jan. 24th) that the winter had stopped his work to a great extent, but that he had got together about 300 specimens of birds, including some good sets of Pheasants, Mountain-Finches, and Chats. He had been mostly in the desert to the west of Bokhara and to the north-west of Samarcand. As soon as the spring started he would be on the move again, and expected to go east into the Pamir-like country of Eastern Bokhara. In the winter near Samarcand small birds were scarce, but all the rivers and lakes swarmed with wild geese and ducks. Mr. Carruthers was in good health, and had had no return of his fever.

Birds of the Far North.—Little mention is made of birds in Commander Peary's (otherwise) interesting account of his last Arctic expedition ('Nearest the Pole'), but during his journey along the "glacial fringe of Grant-Land" (about

83° N.L.) we are told that he saw "a flock of not less than one hundred Brent Geese feeding and sunning themselves." In the same district, on June 20th, a Burgomaster Gull was seen, and the cry of the Purple Sandpiper was constantly heard; the Snow-Bunting and Snowy Owl were also met with and some Ptarmigan were shot for food. We may take it that these six species are among those that range farthest north in the Arctic summer.

The Californian Condor.—The home-life of the "Californian Condor" (*Gymnogyps californicus*), which, as we have lately been informed by some authorities, is a species now verging towards extinction, has lately been closely investigated by Mr. William L. Finley, who has published an account of his experiences in this matter in the 'Century Magazine' for January last. In March 1906, accompanied by Mr. F. Grindell (the present Editor, we believe, of 'The Condor'), he penetrated into the highest ranges of the San-Bernardino Mountains in Southern California "on the trail of the Condor." A nest was discovered with one egg, and during several visits to it in a period of four months a long series of photographs of the old birds and their growing young one was obtained. The story of this exploit is well told and the photographs are excellent. We commend this paper to ornithologists, who may perhaps overlook the appearance of it in the 'Century Magazine,' as well worthy of notice.

We may add that in 1866 * there was a fine example of the Californian Vulture in the Zoological Society's Gardens, where it lived for several years.

A Marked European Stork in Rhodesia.—In 'The Field' of Jan. 25th, 1908 (p. 150), the following letter appeared:—"A curious thing happened here last week. A Stork (*Ciconia alba*) was shot in the gardens of the native village near by. It had a metal ring on one of its legs marked 'Vogelwarte, Rossitten 163, Germania.' It was flying wild with others when shot. It would be interesting to know whether this bird had escaped from some owner and flown here from Europe, and if the date and other details of its escape are known. I have preserved the skin complete with legs attached bearing the metal ring, and should be glad to forward it to the original owner of the bird if possible.—H. Thornicroft (Native Commissioner's Office, Petauke, Fort Jameson, North-eastern Rhodesia, Dec. 16)."

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* See figure of *Cathartes californianus*, P. Z. S. 1866, p. 366.

There can be no doubt that this Stork was one of those captured and liberated (after being labelled) at the Bird-observatory (" *Vogel-warte* ") of the German Ornithological Station at Rossitten in Eastern Prussia. This is a very interesting fact, and it will be of still greater interest when the exact date of the bird's capture and liberation has been obtained.

[P.S.—From the April number of the 'Ornithologische Monatsberichte' (vol. xvi. p. 63) we learn that this Stork was marked by Herr Franz Bahr, at Köslin, in Pomerania, in July last, and commenced its southward flight about the 25th of August in company with two others from the same nest.]

Good Opportunity for a Naturalist.—The formation is advertised of " The South Atlantic Trading Company," formed with the object of shipping to Europe the large deposits of guano stated to exist on the three islands " Gough," " Inaccessible," and " Nightingale," of the Tristan d'Acunha group, and to purchase the S.S. ' Pandora ' for the purpose of the Company's operations. It is well-known that peculiar land-birds (*Nesocichla eremita*, *Gallinula nesiotis*, &c.) exist in these islands *, and there are, no doubt, other animals and plants in them equally worthy of attention. It is very desirable that these should be observed and collected before the natural state of the islands is disturbed by the guano-diggers, and we hope that arrangements may be made for sending out in the ' Pandora ' a Naturalist for this purpose. Here is a fine opportunity for some of the younger members of the B. O. U. to visit one of the few parts of the world as yet but partially explored. The Secretary of the new Company is Mr. J. Osborne Phillips, 4 Cullum Street, London, E.C.

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* *Cf.* Nicoll, 'Ibis,' 1906, p. 675.

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XIV.—*Further Notes on the Birds of Gazaland.*

By C. F. M. Swynnerton, F.L.S., C.M.B.O.U.

[Continued from p. 107.]

(Plate VIII.)

153. Upupa africana. South-African Hoopoe.

Singuni: "Inzimpupu." Chindao: "Chigúbubu." (Both names in imitation of the bird's note.)

Rh., P. I have seen little of this Hoopoe during the past year, probably owing to my absence in September, when it is always most plentiful near Chirinda. However, on the 13th of August I noticed a pair on an open path in the Jihu and heard others calling in the grass-jungle; on the 15th, 16th, and 21st of the same month I noted birds in different localities near Chirinda; on September the 8th in the Inyamadzi Valley, and a few days later in the coffee-plantation at Maruma. Near Arucate I saw this species twice, on December 5th and 6th.

The stomach of my specimen contained weevils and other beetles. The bill was black and the digits and tarsi grey.

154. Irrisor erythrorhynchus (Lath.).

Irrisor erythrorhynchus Reichenow, Vög. Afr. ii. p. 338.

Singuni: "Ihlebabafazi."

Rh., P. This handsome but unpleasantly noisy bird is not uncommon throughout the Jihu, and I obtained a specimen near Chirinda on March 14th, 1907. Odendaal has since sent me a male, dated August 25th, which measured in the flesh 16·2 inches, and an immature female, dated August 20th, which measured 13·6 inches, both obtained in the neighbourhood of Chirinda. In the former the irides were grey-brown, in the latter deep vandyk-brown. In both the feathers of the throat had become a reddish brown, preparatory doubtless to moulting, and in my specimen of March 14th the throat-feathers were already slightly tipped with the same colour. By their broader white quill-spots and longer tails my Gazaland specimens are certainly referable to the present species and not to the more southern form, *Irrisor viridis*.

In the lowlands I noted parties at the Umtefu, near Chibabava (where I obtained a specimen on June 1st), and twice at Arucate.

155. RHINOPOMASTUS CYANOMELAS. Scimitar-bill.

Rh., P. I found this bird during the past year at various points in the upper and lower Jihu, at Maruma and in the Chikamboge Valley, where I obtained a female with advanced ovaries on September 17th in short dense bush. In the low veld I met with the bird between Gwaragwara and Inyamita at the beginning of January. It is usually found in pairs, which move with a soft gliding flight from tree to tree and search the trunks and twigs for insects, often turning head downwards while so engaged, and uttering at times a harsh but low "ka-ka"! A wasp and beetles, and in two cases beetles only, constituted the contents of the stomachs examined.

Two females measured 12·1 and 11·5 inches respectively in the flesh; the irides were deep sepia-coloured.

A male which I shot on the Makabusi River in Mashonaland on August 21st, 1898, seems to be *Rhinopomastus schalowi* Neum. (*R. cyanomelas schalowi* Reichenow, Vög. Afr. ii. p. 347). No. 998, my female of the Chikamboge Valley, appears to be intermediate between the two forms.

156. Cypselus caffer. African White-rumped Swift.

Rh., P. On September 25th large companies of a small black Swift, which I have little doubt was referable to this species, were dashing madly with shrill cries about the face of the huge rugged cliffs of the Chimanimani Mountains, and frequently visiting the overhanging ledges of rock, and especially a cave in the form of a *mâchicoulis,* where they were doubtless breeding. I also saw these Swifts in large numbers on the Nyahode River earlier in the same month, while a considerable party passed over Chirinda on November 3rd. In the lowlands I found them numerous during the first half of January in patches of Palmyra palm country, between Chimbuya and the Umtefu, and at one or two points between this river and the Zinyumbo Hills.

157. Cypselus æquatorialis v. Müll.

Apus æquatorialis Reichenow, Vög. Afr. ii. p. 379.

P. This is the Swift referred to in my last paper ('Ibis,' 1907, p. 280) as *Cypselus* sp. inc. It agrees very well with specimens in the British Museum. It has not previously been recorded south of Nyasaland.

158. Caprimulgus fervidus. Fiery-necked Nightjar. (*C. rufigena* of my previous paper, 'Ibis,' 1907, p. 280.)

Chindao: "Muswerahope." Singuni: "Isavolo." (Both names are applied to Nightjars in general.)

Rh., P. In November 1906 I found two eggs of this Nightjar lying in a slight depression of the ground in a fine clump of *Acacia caffra* beside my camp on the Kurumadzi. They were very pale salmon-pink, freckled and spotted all over with a slightly darker shade of purplish pink. The sitting bird allowed a very near approach before rising, but, once flushed, would sometimes remain away from the nest for hours together. About Chirinda pairs of this Nightjar sometimes regularly frequent such isolated forest-remnants, consisting of a few trees each, as still hold their own on the grassy slopes. Both there and on the outskirts of the forest itself they frequently settle lengthwise on the larger branches of such reddish-barked trees as *Bersama* *niassæ*, where their coloration renders them very difficult to detect. Two nestlings, taken near Chirinda, were brought to me on October 20th, but I only succeeded in keeping them alive for two weeks, feeding them chiefly on Melolonthid larvæ. They were grave stolid little fellows and remarkably pretty. Their cry when hungry strongly resembled that of the adult of *C. trimaculatus*, but was of course far weaker. The bill was deep sepia-coloured, the irides deep rich umber, and the feet light purplish grey, all these parts being lighter than in the adult bird. The nest, which I inspected, was again a mere unlined hollow in the ground. A stomach of this species contained beetles and spiders. A male measured 10·3 inches in the flesh and two females 9·35 and 9·55.

159. Caprimulgus trimaculatus. Freckled Nightjar.

Rh. I have come across this Nightjar fairly frequently during the past year in the neighbourhood of Chirinda, where it may frequently be found settling at dusk in the centre of the road, or frequenting short cattle-pasture for the sake of the coprophilous beetles attracted thereto. It is readily distinguished by its large size and its peculiar call, a very loud liquid "kwa-kweu" (with the stress on the "e"), sounding at a distance like "kyoo-kyoo!" The birds called nightly on the roofs of my buildings throughout August 1906, and are evidently somewhat exclusive, as during that time none of the two smaller species of Nightjars which usually frequent the homestead were heard to call within two or three hundred yards.

The stomachs examined have contained beetles, large and small, chiefly Melolonthidæ and Scarabs (including *Diastellopalpus*) and in one case locusts and moth-ova as well.

In the upper mandible the tip is black, the nostrils blackish, and the remainder ashy grey. In the lower the extreme tip is also black and the rest light purplish grey. The feet are dusky grey with a tinge of purple, the iris dark umber, the eyelids very pale ochreous brown, and the claws dusky, the pectination being paler and tinged with purple. Two males measured 10·75 inches each in the flesh.

160. Caprimulgus fossii. Mozambique Nightjar.

Rh., P. The call either of this Nightjar or of *C. fervidus* (I have been unable to ascertain which utters it) is rather well rendered by the natives as "Chidekúruru! Mukadzi warorgwa!" (Grandpapa! my wife is paid for!), and I constantly heard this "Chidekúruru" note about Melsetter in September.

The stomach of a male which I secured on the 8th of January, flying and settling with its mate amongst some Kafir huts on the Umtefu, contained nine small coprophilous beetles and a Scutellarid bug. Another contained a large number of *Onthophagus gazella.*

The bill is usually light reddish brown with a black or blackish tip, the palate and gape flesh-pink. The eyelids are whitish and the irides very deep umber-brown. 9·65, 9·75, and 10 inches represent the length in the flesh of three males measured. The wing-measurement of the five specimens in my collection varies from 5·9 to 6·7 inches, and that of the tail from 4·3 to 3·5. This is evidently a very variable species.

161. Cosmetornis vexillarius. Standard-wing Nightjar.

Rh., P. The usual Nightjar-names, "Muswerahope" and "Isavolo," are commonly applied by the natives to this bird, though, in Chindao, a special name, "Mwere," is sometimes used for the male in breeding-plumage. A female, obtained by Odendaal near Chirinda on January 16th of this year, measured 10·3 inches in the flesh.

162. Coracias garrulus. European Roller.

Singuni: "Iveve" (applied to all Rollers, including *Eurystomus afer*).

P. I first noted these Rollers on December 6th in the open bush near Gezanye, where quite a number were settling high in the trees and making flights after their prey; I noticed one catch a large insect very cleverly on the wing. During the first few days of January I found them quite common, singly or in pairs, throughout the lowlands from Malata to the Zinyumbo Hills. They had evidently only just arrived, as I had seen none, except at Gezanye, on passing though the same country in December.

The iris in a young female was umber, in an adult bird hazel; the feet in both cases were light citron-yellow. The two stomachs examined contained respectively beetles and a quantity of the ordinary migratory locusts in the larval stage.

163. Coracias caudatus. Moselikatze's Roller.

Rh., P. I came across this Roller on several occasions during my recent journey across the low veld, noting it in December at Inyajena and other points between the Umtefu and Chibabava and at Muchukwana. On the 3rd and 4th of January I met with it between Gwaragwara and Inyamita and between Inyandhlovu and the Idunda River. It is a wary bird, perching on the tops of trees, and flying off at once when approached. Two small crabs, two delicate green Locustid grasshoppers, migratory locusts, several weevils, and a large spined *Inyaliopsis* constituted the contents of two stomachs examined.

164. Coracias mosambicus. Purple Roller.

Rh., P. I noticed this Roller in December on the Buzi between the Idunda and Inyandhlovu, and at Boka's, and again in January in the first-named locality. The iris may be brown, dull chestnut, or hazel, varying with the age of the bird. The feet are citron-coloured. An adult measured 13·8 inches in the flesh.

165. Eurystomus afer. Cinnamon Roller.

Rh., P. The Cinnamon Roller reached Chirinda in 1906 on the 12th or 13th of October, and thenceforth frequented especially the higher branches of some huge African mahoganies (*Khaya senegalensis*, var.). In the lowlands I came across single individuals (in all probability the mates of sitting females) during December 1906 and January, especially at Boka, Muchukwana, and, at intervals, between Inyajena and Zinyumbo, particularly in the high trees bordering the rivers. In 1907 these birds had again already reached Chirinda by October 15th, a female recently received from Odendaal bearing that date. It measured 11·3 inches in the flesh.

166. Merops apiaster. European Bee-eater.

Chindao: "Igwiru-gwiru" or "Ikweru-kweru" (applied to all Bee-eaters in imitation of the note of the present species).

Rh., P. The first flock of European Bee-eaters to arrive in 1906, consisting of fifteen individuals, reached Chirinda on the afternoon of November 15th, passing on southwards with their usual ringing chorus. After that date small parties of about twenty birds occurred almost daily for a short period. In that year they had left the neighbourhood of Chirinda at the end of March, the last which I saw being a flock flying rapidly over at a considerable height and in a north-westerly direction on April 2nd. In 1907 they remained longer. Parties of fifty had been frequenting my plantations of Ceara rubber (*Manihot glaziovi*) near Chirinda daily for some weeks, and feeding on the bees which had been attracted in great numbers by the Manihot flowers; they were still present on the 20th of April when I left for England. In 1898 they had already reached Salisbury in Mashonaland on October 16th, two immature specimens in my collection bearing that date.

Two stomachs examined contained respectively eighteen bees and three other hymenoptera, nineteen bees and a Cetoniid; in two other cases beetles only were found; in two, bees and a skipper butterfly. The irides in my specimens were carmine and the feet grey. Two males measured in the flesh 11 inches each, and two females 10·9 and 10·5 inches.

167. Merops persicus. Blue-cheeked Bee-eater.

P. I found great numbers of these birds in the neighbourhood of some large pools near Chibabava, which I visited on the 2nd and 12th of December, 1906. They were perched conspicuously on the topmost and outer branches of the trees and bushes on the banks, or hawking over the swamp for dragon-flies and other insects, which they were particularly dexterous in capturing. They would sometimes suddenly drop or rise vertically six inches or a foot when in full career in order to seize their prey. Yet I saw one strike deliberately at a *Belenois* (of which the rapid erratic flight must be very puzzling to a bird) and miss it. I have noticed the same difficulty on the part of *Dicrurus afer*. The call of this Bee-eater is frequently uttered, and is much like that of *Merops apiaster*.

One stomach examined contained sixteen bees, three large dragon-flies, and an Acræa butterfly; another a dragon-fly only. Two males measured respectively 10·5 and 10·6 inches in the flesh; the irides were carmine and the tarsi light golden brown, the toes darker and somewhat blackish.

168. Merops nubicoides. Carmine-throated Bee-eater.

P. I have never noticed this striking species in the Gazaland highlands, but on the evening of December 4th (1906) I watched a pair hawking round some drinking-pools at Arucate.

169. Dicrocercus hirundineus. Swallow-tailed Bee-eater.

P. On August 4th I secured a male of this species. It was perched on the topmost twig of a *Rauwolfia* in the grass-jungle, whence it had just made a successful flight after an insect, turning a complete somersault in securing it. It measured nine inches in the flesh; the feet were dull grey, and the irides carmine; while the stomach contained large diptera and beetles.

170. Melittophagus meridionalis. Little Bee-eater.

Rh., P. I have usually noted this species in pairs, even throughout the winter (*e. g.*, near Chirinda in July and August 1906). The two birds usually perch within a few feet of one another on the same bush or stake in the grass-jungle, and thence make graceful flights, short or occasionally sustained, after passing insects. When the bird is at rest the tail is held vertically downwards and as a rule kept in constant motion, vibrating slightly but rapidly backwards and forwards. In the lowlands I noted this Bee-eater on January 3rd, 1907, between Gwaragwara and Inyamita. The stomach of a specimen which I obtained in Mashonaland in 1899 contained two small wasps, two flying-ants, one fly, and beetles (one *Onthophagus parumpunctatus*, one *O. gemmeus*, and one *Sphænoptera reticulata*); others, examined since, have contained flies and other small insects. One of my specimens (Odendaal's No. 351) has a trace of the blue forehead which distinguishes *M. cyanostictus* from the present species. *M. cyanostictus* has already been recorded from Beira, where it was obtained in two localities by Cavendish ('Ibis,' 1900, p. 115).

171. MELITTOPHAGUS BULLOCKOIDES. White-fronted Bee-eater.

P. These Bee-eaters were particularly common in December and January, not only along the river, but at isolated pools and even in the bush, between Chibabava and Muchukwana. During my stay at Chibabava numbers of these birds, usually in scattered parties of five or six, which occasionally united into flocks of as many as forty or fifty individuals, were to be seen daily insect-hunting or amusing themselves amongst the branches of the large *Trichilias* and other shady trees, or in the denser scrub which clothed the lower bank of the river. Thence single birds would constantly take flights low over the water, sometimes to the very centre of the river, which was here extremely wide, and more often than not dip into the water, taking something from it in their bill before returning to their station. On November 29th, in little more than five minutes I counted twenty-six such dips into the water on the part of the members of a party of about twenty, and during the whole time that I was watching, perhaps a quarter of an hour, I saw the birds fly out six times after butterflies of some size, including Pierines, probably *Catopsilia florella* and *Belenois severina* or *B. mesentina*, as these seemed to be the only white butterflies which were flying over the water. In these six attempts the butterfly was caught outright only twice; on two other occasions, after much dodging, it got away and the bird returned to its perch; while on two remaining occasions, on one bird missing the insect, several others promptly flew out (the first time seven or eight, and the second time three) to join in the sport, the butterfly being eventually captured each time after some little darting about and confusion. Besides this, on quite a number of occasions, I saw a bird aim at or catch what I took to be a Lycænid, the others going out to its aid in the same manner three or four times. Presumably what they dipped at in the water were floating insects. Frequently they would fly out to their object, dart backwards and forwards over it within a radius of two or three feet, and then return without having struck; what they had detected from the shore had evidently proved on closer inspection to be something inedible. Towards evening they would become very noisy, flying in small parties amongst the low trees and scrub at the water's edge and the larger trees above, crossing and re-crossing the river, and all the time keeping up a chorus of coaxing notes—"gweye-gweye gwehehe!" Evidently, like the Touracos, they become excited as bed-time draws near, and even when it is practically dark an individual bird will frequently dart out over the stream and return with its captive in its bill. Another common note was a harsh but not very loud "kara-kara, ka-kara-kara," &c., and once or twice the birds uttered a peculiar slow "ke-*ir*iriri-ri*ri*-ro!" They were very tame, my main difficulty being to get far enough away for a shot, but when finally they saw one of their number fall to my gun they flew round and round and eventually vanished with shrill cries of "gwea-gwea!" Two males measured 8·8 and 9·85 inches respectively, and four stomachs examined contained beetles (including a Cetoniid), hymenoptera, a butterfly (*Acræa*), and, twice, a Cicada. The irides were very dark warm brown and the feet dark leaden or blackish grey. A bird in quite immature plumage, shot on Dec. 15th, did not differ from the adults in these respects.

172. CERYLE RUDIS. Pied Kingfisher.

Rh., P. I noticed these birds fishing in pairs between Malata and the mouth of the Buzi and in the sea at Beira, in December 1906.

173. CERYLE MAXIMA. Giant Kingfisher.

P. This bird appears to be distinctly rare in our portion of Gazaland, though I understand that it is far more frequently met with towards the coast. On September 8th, 1906, I saw an individual on the Inyamadzi. It was very unapproachable, and flew wildly up the river when followed, settling here and there on the high reeds or trees, and uttering in flight a loud tinny "gweh-gweh-gweh!"

174. ALCEDO SEMITORQUATA. Half-collared Kingfisher.

Chindao: "Chinyurahowe."

P. I watched one of these birds on the Kurumadzi on August 1st, 1906, and had noted them previously on the Zona and Chinyika Rivers.

175. ISPIDINA NATALENSIS. Natal Kingfisher.

Rh., P. On two or three occasions during 1906 one of these little Kingfishers visited my orchard, which is some distance from the nearest stream. It took up its station on the outer twigs of some large mulberry-trees, and thence made constant flights, occasionally to the ground, after insects. On November 28th, during my absence in the lowlands, Odendaal found a pair occupying a hole close to a clump of bananas, and secured the male on the nest. The three eggs measured 19 by 15·5, 18 by 16, and 17·5 by 15 mm. respectively. A male in my collection measured 4·8 inches in the flesh, and a female 5·1 inches. The bill and feet of the former were coral-red; the bill slightly dusky on the culmen, especially at its base. A stomach examined contained two larvæ, a grasshopper, and beetles, another a quantity of grasshoppers.

176. CORYTHORNIS CYANOSTIGMA. Malachite Kingfisher.

Rh. I have a note to the effect that the Mashona name of this Kingfisher is "Chishashero." In an immature female obtained near Chirinda on April 1st the front of the tarsi was dusky brown, but the back was orange-pink, as were also the soles. The irides were a darker brown than in the adult bird.

177. Halcyon swainsoni. Grey-headed Kingfisher.

P. During my journey across the low veld in December 1906, and the succeeding January, I constantly came across this Kingfisher in the open woodlands, nearly always perched solitary on some prominent but low branch of a tree, on the look-out for passing insects. Localities where it appeared to be especially numerous were (in December) between Chibabava and Muchukwana; and in January, near Muchukwana, at the Umtefu, and between the Muzala and Inyajena. The stomach of one of my specimens contained two large crickets and other insect débris. The bill of a non-breeding male was of a rather dusky red, the front of the tarsus and upper surface of the toes dusky red, while the back of the tarsus and the soles were bright coral-red. In a second specimen, apparently a female, the bill was dull reddish brown with the point blackish and the extreme tip amber, while the feet were of the same colour or perhaps slightly more pink. The former measured 8·1 inches in the flesh.

178. Halcyon orientalis. Peters's Kingfisher.

Chindao: "Idedérigwa" (applied to all Bush-Kingfishers).

Rh., P. During 1906 I noted this, our common Bush-Kingfisher, on the Inyamadzi and Lusitu Rivers, on both occasions in September, as well as about Chirinda. I also found it at Chibabava in December, alighting on projecting branches with a loud Woodpecker-like cackle (sometimes after a flight down the river) or frequenting the large shady Trichilias in the neighbourhood. Among beetles these birds appear to have a special partiality for Cetoniidæ, and in one bird's stomach I found an *Amphisbæna*. They are also readily trapped by means of Melolonthid larvæ. In the breeding male the bill is bright scarlet, with the tip, and sometimes the base, dusky; the feet, too, are scarlet, with the soles of a more delicate coral-red. In non-breeding males the scarlet of the bill may be darker, and the upper surface of the tarsus and toes dusky crimson, or brown-madder. This applies, too, to the feet of the female, the bill of which is dusky carmine, completely dusky along the commissure, at the base, along the ridge of the culmen, and at the tip. Thirteen of these Kingfishers, measured in the flesh, averaged 9·2 inches, with a range of from 9 to 9·4. The sexes do not appear to vary in this respect.

179. COLIUS STRIATUS MINOR. Eastern Speckled Mouse-Bird.

Colius striatus minor Reich. Vög. Afr. ii. p. 203.

Colius striatus Swynnerton, Ibis, 1907, p. 285.

Singuni: "Indhlazi."

Rh., P. I found these birds in considerable numbers during September 1906 in the Chikamboge Valley, attracted by the berries of three species of *Lippia* with which the valley abounds. I have shot a breeding male as late as May. In 1906 they attacked my peach-crop in August, when the fruits were still quite small and hard, usually in a flock of from twenty to thirty individuals, and did great damage, leaving quantities of bare stones attached to the twigs. Fortunately they have the habit when alarmed of congregating together in small groups, so that several can be brought down at one shot. Shooting them wholesale, however, does not frighten them in the least; we killed upwards of fifty in comparatively few days, but the numbers in the flock always remained fairly constant, fresh birds appearing from the veld to fill the gaps. On August 17th we reduced the flock to three birds, but within three days it had again increased to thirty-five. I examined the stomach-contents of all that were killed and only in a single instance did I find anything but fruit, wild or cultivated, the exception being a larva which had doubtless been swallowed accidentally in the fruit. I have also found green leaves in the stomach. In an immature male the upper mandible was pale greenish, its point, and the whole of the lower, brown. It measured

8·5 inches in the flesh. Thirty-one adults, measured in the flesh, gave an average of 12·86 inches, the largest and smallest males measuring respectively 14·7 and 10·75 inches, and the largest and smallest females 14 and 11 inches. The blackish throat serves fairly well to distinguish this bird from the typical Southern form; in wing-measurement the difference is sometimes not great, some of my specimens measuring as much as 3·6 and 3·7 inches, while several of the longer tails measure from 8·5 to 9·35 inches.

180. COLIUS ERYTHROMELON. Red-faced Mouse-Bird.

Rh. I have lately received a specimen of this Coly from Odendaal, shot by him in the neighbourhood of Chirinda on August 28th. It measured 14·5 inches in flesh; its bill was "crimson tipped with black, its feet were rose-red, and its irides grey." Its stomach contained the pulp of oranges.

181. BUCORAX CAFER. Ground Hornbill.

Singuni: "Isingizi." Chindao: "Iriti."

Rh., P. Four of these birds visited my cultivated fields at frequent intervals during 1906, doing good service amongst the grasshoppers and cut-worms. They are the most useful species that we possess and deserve protection more than the Secretary-Bird, which, from the greater activity of its movements, is a more dangerous enemy to young game than is the present bird.

Odendaal, writing on December 20th, 1907, tells me that he has found a nest in Chirinda containing a nearly-fledged young bird.

This species extends to the coast on the east (I saw a party of four in the open woods near Beira) and to the Umvumvumvu to the north. It is one of the first birds to commence calling in the morning, long before sunrise.

182. BYCANISTES BUCCINATOR. Trumpeter Hornbill.

Chindao: "Ikakamira" or, sometimes, "Ishérera-kuri" (forager-afar). These names are also applied to *B. cristatus*.

Rh., P. During the last few days of December, 1906, while I was absent in the lowlands, Odendaal sawed down a large *Maba* in Chirinda and took from it uninjured four unfledged young of this species. One of them had evidently been hatched long after the others, being half their size and very backward in appearance. The nest was about twenty-five feet from the ground in the hollow trunk (there nearly four feet in diameter) and was entered by a slit so narrow that it was difficult to believe the female could squeeze in. This had been mudded up with a mixture of the red "Jihu" earth of the forest and the bird's own droppings, containing seeds of figs, &c. The barricade had already been broken down by the birds themselves when the nest was discovered, but I myself saw what remained of it on my return. Another slit, higher in the tree, had evidently been also used as a nest the year before, and the brick-red colour of its edges still bore evidence of its having been mudded up. The young birds throve well on bananas and papaws, and for sheer voracity I think that they easily bore off the palm from all other bird-families that I have ever reared. Their cries, when anyone entered the room, and particularly when they were receiving food, were truly appalling, resembling at a short distance nothing so much as the squealing of a pig in agony. As they put on feathers and grew stronger, they would hustle each other, and worry each other with their bills (the weakling generally ending by receiving the unwelcome though harmless attention of all the others at once), while, in their eagerness for the food, they would jump up on to the side of their basket or on to my hand and shoulder, all the time uttering deafening cries. Like my adult Zambesi Trumpeter, they would take the food with the point of the bill and toss it into the gullet by one or more backward jerks of the head. They are evidently a long time in arriving at maturity, for the three elder nestlings, judging by the subsequent slow progress of the fourth, must have already been several weeks old when taken, though still callow. They subsequently put on feathers very slowly, being anything but respectable at the time of their death after three months' captivity, while the casque had even then appeared only to a slight extent. Evidently the eggs are laid at intervals; one of the three older birds was itself much more advanced than its companions and was already quite at home amongst the perches in the aviary in the middle of February, while the other two, even in March, could not rise unassisted even to the lowest, though they made ludicrous attempts to do so. On the ground they are clumsy, sprawling creatures, usually resting flat on the tarsi with the tail held up perpendicularly. Odendaal drew my attention to the curiously raised appearance of the skin of the back of the youngest, which might be compared to an extensive low blister. A trace of this condition was still apparent in the larger birds, and was more so, he informed me, when he first took them. It disappeared rapidly with their growth.

I have noted this bird in the Inyamadzi Valley and, on September 17th, found several feeding on the ripe "Mutowe-towe" figs in the Inyamkuwha forest-patch in the Chikamboge Valley. Dierking informed me that a solitary individual of this species had frequented his orchard near Maruma, during August and September, for about a month, being there daily and allowing an approach to within ten or fifteen yards. It fed chiefly on his papaws—with his full permission! I noted quite a number about the Maruma forest-patch in the same month. In the low veld I found these Hornbills on the Mwangezi River, and in dense bush near Boka and Chibabava in December and January. In the adult bird the bill, casque, and feet are dark grey, the bare skin round the eye is rosy carmine, and the irides are dark red. In the young bird the bill is dark leaden grey, the feet are blackish, and the irides dark brown. A stomach contained a large metallic beetle and a number of smallish fruits. This Hornbill does not appear to associate with *B. cristatus*, unless when attracted to the same tree by a ripe crop of fruit, and I only once found it making the pilgrimage to the Inyamadzi and back, which was indulged in daily by the other species. This was on August 29th, when two parties, one of nine, the other of forty-eight birds, passed over on their way thither about an hour before sunset. All were *B. buccinator*, at once distinguishable by their conspicuous white abdomens, and they uttered one of their plaintive calls continually as they flew.

183. Bycanistes cristatus (Rüpp.). Zambesi Trumpeter.

Rh. On November 3rd, 1906, I slightly winged a female of this species, which subsequently lived for some time in my aviary. When captured she bit savagely and indulged in the most ludicrous braying, which was kept up for quite long at a time and answered by her friends in the trees. It was evident that she had recently been sitting, as she had moulted and was only just getting a new crop of feathers. On the ground she was very clumsy, usually sitting flat on the tarsi and even moving about in that position with her tail trailing along the ground. She soon became fairly tame, but was an exceedingly clumsy feeder. When a large fig was thrown down she would pick it up with the point of her bill and keep pressing and turning it, though never exerting much force, until it was fairly soft. At last it would split and be finally formed into a long mass, which she would throw up into the air, catching it in the trough of her lower bill and trying to manœuvre it down her throat by throwing her head first to one side and then to the other. The fig would either slip down a little at each jerk or, as often as not, fall out altogether, when she would commence again. At last she would succeed in throwing it right back into her throat and after a little trouble and much jerking of the head get it down. This would account for the number of bruised and broken figs and other fruit that are found under the trees in the forest, for the Hornbills evidently drop far more than they eat. She was very conservative, refusing peaches and other cultivated fruits. For a few days before she died she sat on the ground in a corner with her bill resting against the wall or with her head thrown backwards between the shoulders on to her back and her bill pointing upwards, remaining motionless for hours in that strange position; the weight of the great casque and bill evidently told on her as she became weak. I frequently come across these Hornbills in Chirinda in the mornings up till shortly after sunrise, before they scatter to their feeding-grounds, lolling on the branches, usually with their breasts flat on their feet and their great heads and necks leaning forward horizontally or downwards as they bask in the early morning rays. Occasionally they move lower or higher along the branches with ungainly sidelong hops, sometimes turning suddenly right round in hopping. Specimens are most easily obtainable in June, when the main crop of Chisipi figs ripens. During August and the early part of September these birds used to leave the forest every evening before sunset and fly over to the Inyamadzi, dropping to roost into the dense-foliaged trees that grow out amongst the inaccessible crags of the upper part of the gorge. Probably this was due to their being molested by wild animals in Chirinda. They go across in large parties of forty or more, the individuals flying singly or from two to five together, but the party as a whole keeping more or less in a straight line and preserving their places moderately well throughout the journey. Although they usually travel at a height of about three hundred feet, the noisy sawing strokes of their wings can be heard quite plainly; these are usually repeated several times and then followed by a few yards of motionless gliding flight. The berries of a large *Maba* and of a fine *Strychnos*, common in Chirinda, are amongst the favourite food of these Hornbills. They are very easily roused at night and fly off at once even if anyone passes with a lantern a hundred and fifty feet below them, making a great noise with their wings.

The casque is creamy in colour and the bill is usually leaden grey, in one specimen, however, it was dirty brown, in another pale ochreous like the casque. It is blacker towards the base, where it is finally bounded by a white line descending vertically across both mandibles in front of the eye from below the nostril. The bare skin below the eye is dark grey or blackish, in one specimen it was strongly tinged with pink. The irides vary a good deal, being bright brown-madder, hazel, deep dusky purple, grey, or deep brown. The feet and claws are black, the soles pale brownish. Seven of these birds, measured in the flesh, averaged 32·85 inches, with a variation of from 31 to 34·5.

Chirinda is, I believe, the southernmost locality yet recorded for this species.

184. Lophoceros melanoleucus. Crowned Hornbill.

Chindao: "Igoto." Chizwina (Mashona): "Woto."

Rh., P. I found these Hornbills in the upper Jihu, just south of Chirinda, in July 1906, and noted a pair on August 1st on the Kurumadzi. They were common on the Inyamadzi in September, frequently crossing the valley or flying from tree to tree. In ordinary flight they give a few heavy flaps and glide a few yards, then come some more flaps and a glide, and so on. When descending slantwise they glide rapidly, merely making an inward movement of the wings to the sides every few yards.

I again noted them constantly in the Chikamboge Valley and at Maruma in the same month, where one was frequenting a banana-grove within a few yards of Dierking's house. I also met with them at intervals throughout the lowlands, obtaining a specimen at Indabila on January 4th.

185. Hapaloderma narina. Narina Trogon.

Rh., P. On August 10th, near the Kurumadzi, a female rose on my approach from a stream, where it had evidently been drinking, into a small tree. It did not appear at all shy, merely ascending by one or two rapid flights and then sitting quietly looking at me with its head over its shoulder and its metallic-green back flashing back the rays of the sun—a lovely bird. Odendaal has since sent me a second female, obtained by him near Chirinda on October 2nd, 1907.

My specimen measured 11·5 inches in the flesh, its stomach contained a larva, grasshoppers, hymenoptera, and quite a number of beetles, including two large Cetoniids. The culmen was blackish, the base of both mandibles gamboge, and the point of the lower light greenish grey. The irides were deep umber-brown and the feet delicate pale pinkish brown, whitish between the scutellations.

186. CAMPOTHERA ABINGDONI. Golden-tailed Woodpecker.

Chindao: "Chinyamdododza." Singuni: "Isiqop' umuti." (Both these names are applied to Woodpeckers in general.)

Rh. I have several times come across this Woodpecker in Chirinda and Chipete during the past year, while Odendaal has recently sent me two females from the same locality, dated June 6th and August 19th, and measuring 7·95 and 8·65 inches, respectively, in the flesh.

187. CAMPOTHERA BENNETTI. Bennett's Woodpecker.

Rh., P. I noted this Woodpecker once or twice on the Kurumadzi in August on large isolated trees in the grass-jungle. In an immature bird the irides were dark brown instead of deep crimson and the dark grey bill had a white tip to the upper mandible. A female measured 8·5 inches in the flesh.

188. CAMPOTHERA FUELLEBORNI Neum. Fülleborn's Woodpecker.

Dendromus malherbei fülleborni Neum. J. f. O. 1900, p. 204.

Rh. I recently received a skin of this Woodpecker shot by Odendaal near Chirinda on August 29th, 1907. It was a male and measured 7·55 inches in the flesh. "Upper mandible very deep sepia-coloured, lower pale leaden-grey with darker point; iris light umber; feet pale olive." This is, so far as I am aware, the southernmost record for this species.

189. DENDROPICUS ZANZIBARI. Zanzibar Woodpecker.

Dendropicus zanzibari Malh.; Hargitt, Cat. B. M. xviii. p. 297.

Rh., P. I shot a female of this bird on the Kurumadzi on the 10th of August, 1906. In the lowlands I found it common in December and January at Chibabava, while I also met with it on the Umtefu, again between that river and Chimbuya, and three times between Gezanye and Bimba. Two males measured 6·05 and 6·1 inches in the flesh and a female 6·5 inches. I find that only one of my specimens (from Salisbury in Mashonaland) is typical *D. cardinalis*, without a yellowish wash above and with a wing measuring 98 mm. All my Gazaland specimens are referable to the East African form tinged with yellow on the under surface and washed with yellowish olive above. The wing-measurement varies from 90 to 94 mm., 79 in an immature bird.

190. THRIPIAS NAMAQUUS. Bearded Woodpecker.

Rh. Odendaal obtained two specimens of this Woodpecker near Chirinda during 1907, a male on July 15th, measuring 9 inches in the flesh, and a female on September 3rd, measuring 9·5. The iris in each case was crimson and the feet were blackish.

191. INDICATOR SPARRMANI. Sparrman's Honey-Guide.

Rh. I shot a male of this species in the Lusitu Valley on September 19th, 1906. It was sitting bolt upright (unlike what I have noted with regard to *I. minor* and *I. variegatus*) on the top of a small tree, uttering constantly a double "tee-treee!"—piping notes a little like those of *Cossypha natalensis*, but with a trill only in the second syllable. I heard it again on September 30th on a hill-top in Mafusi's country overlooking the Lusitu. Odendaal has since sent me a further specimen, a male, shot by him near Chirinda on June 27th. My male measured 7·6 inches in the flesh. The bill was light pink, the feet were dusky, and the irides light reddish brown. The stomach contained bee-grubs, beeswax, and the head of a termite.

192. INDICATOR VARIEGATUS. Scaly-throated Honey-Guide.

Rh., P. I obtained a female and a male of this Honey-Guide on August 6th and 11th, 1906, respectively, in dense bush on the Kurumadzi. The native who was with me on the second occasion said "a Honey-Guide won't die alone—whenever we have trapped one we always know that we have trapped some other bird close by." As at that moment I saw and shot a Sparrow-Hawk he delightedly pointed to this as proof of his statement. The stomachs in both cases contained beeswax mixed with débris of small insects. The two birds measured 7 and 7·1 inches in the flesh. Both were moving about noiselessly on the larger branches amongst dense foliage. Odendaal has since sent me another male, stated to measure 7·34 inches in the flesh, shot near Chirinda on June 18th.

193. Indicator major. Yellow-throated Honey-Guide.

Singuni: "Inhlalala." Chindao: "Ishezu." (Both these names are applied to all the Honey-Guides.)

Rh. On the 29th of March, 1907, Odendaal shot a male of this species, one of four which were in attendance on a bees' nest that had just been taken from a hollow tree. It measured 7·25 inches in the flesh; the bill was black, the feet were blackish, and the irides brown. The bare skin round the eye was bluish grey. The stomach contained beeswax only.

194. Indicator minor. Lesser Honey-Guide.

P. I obtained one of these birds on August 6th, 1906, sitting quietly on a branch in the dense bush on the Kurumadzi. It measured 6·25 inches in the flesh; the upper mandible and the point of the lower were blackish, the rest of the lower mandible was pinkish grey, the feet were olive-grey, and the irides dark brown. The stomach contained beeswax and the remains of small insects.

As it still appears to be doubted whether these birds really do lead to honey, I may mention that on May 29th, 1898, I myself and one of my natives were guided by a Lesser Honey-Guide to a bees' nest in a hole in the ground close to the junction of the Hanyani and Makabusi Rivers in Mashonaland, the bird behaving just as it is ordinarily reported to do.

195. Lybius torquatus. Black-collared Barbet.

Chindao: "Umkweboro."

Rh., P. In the lowlands from November 1906 to January I met with this Barbet on the Zinyumbo Hills, at Chimbuya, on the Umtefu, and between Muchukwana and Chironda, always in the open bush. I have on more than one occasion noted a pair facing each other on the same twig two or three inches apart, both bobbing up and down in the most comical manner, while the male continually uttered the loud "kweboro" note. Both male and female have also a harsher note, in which they indulge on the same occasions. About Chirinda I have frequently come across these birds in the old abandoned fields, particularly from June to August, feeding on the ripe berries of various Lippias, usually in company with Colies, Seed-eaters, and other species. Both the irides and feet vary to some extent, the former, usually chestnut, being in one female crimson tinged with purple, while the feet vary from deep brown to blackish or dark ashy grey. The stomachs examined contained the fruits of *Zizyphus mucronata* and other fruits wild or cultivated, beetles, diptera, Xylocopid bees, and other insects. Their lengths vary in the flesh from 6·85 to 8 inches.

196. BARBATULA BILINEATA. White-browed Tinker-Bird.

Rh. I shot one of these birds on the outskirts of Chipete on April 26th, 1906, as it was insect-hunting amongst the flower-laden twigs of a large *Catha edulis.* I have heard them occasionally since both there and in Chirinda.

197. TRACHYPHONUS CAFER. Levaillant's Barbet.

Rh. I trapped one of these birds, a male, on July 1st, 1906, in a thorn hedge at the foot of Chirinda, while a second male was obtained by Odendaal in the same locality on May 27th, 1907. Both measured nine inches in the flesh; the bill of the first was pale yellowish green tipped with blackish, the irides were brown-madder and the feet dark ashy grey. The stomach contained guava-seeds, a grasshopper, and a beetle.

198. CUCULUS SOLITARIUS. Red-chested Cuckoo.

P. On December 20th, 1906, I shot one of these Cuckoos from the top of a tall *Khaya senegalensis* near Boka; it was continually uttering its loud triple note, with great effort judging from the simultaneous swelling of its body. It measured 12·7 inches in the flesh. The upper mandible was glossy blackish, the lower pale greenish grey with an ochreous base, and the gape was orange. The irides were dark brown, the eyelids bright gamboge, the bare skin round the eyes was olive-green, and the feet were dull gamboge.

199. CHRYSOCOCCYX SMARAGDINEUS. Emerald Cuckoo.

P. I heard this Cuckoo calling on the Kurumadzi on August 5th and 7th, 1906.

200. CHRYSOCOCCYX CUPREUS. Didric Cuckoo.

Singuni: "Inchalayandayandai" (in imitation of the bird's call).

Rh., P. During the past year I have come across the Didric in the upper Jihu and occasionally on the Kurumadzi both in August and November. In the lowlands I noted it at several points between Chibabava and Chironda between December and January, and used constantly to hear its call during my stay at the former place. Odendaal has just sent me a male, which he obtained near Chirinda on Dec. 30th, and which measured 7·7 inches in the flesh.

201. COCCYSTES GLANDARIUS. Great Spotted Cuckoo.

P. I twice noted a pair of these Cuckoos on December 6th, 1906, in the *Brachystegia* bush near Arucate. In three specimens which I obtained in Mashonaland in January 1899, the eyelids were vermilion, the feet blue-grey, while the bill was dull black, white at the angles. The stomachs examined contained locusts, beetles, and quantities of large hairy caterpillars.

202. COCCYSTES HYPOPINARIUS. Black-and-Grey Cuckoo.

Rh., P. This larger grey-chested race of *Coccystes jacobinus* is represented in my collection by No. 1115, a female shot at Zinyumbo on Nov. 25th, 1906, having three well-developed eggs in her ovaries. On the other hand, a specimen obtained near Chirinda on February 6th is certainly typical *C. jacobinus*, while No. 471, shot in the same locality on March 1st, is intermediate between the two, both in colour and in measurements. I found these birds common from the Chinyika River to the Zinyumbo

Hills in November, usually in pairs, chasing one another about, and uttering their loud piping notes, some of which may be rendered as "Tyo-whi-whi-whiri!" "Tyo-whi-tyo! tyo-whi-tyo," "Tyo-whi, tyo-whi," &c. I also frequently came across them perched on the top of a tree, with crest brought forward, uttering a loud harsh "gweh-gweh-gweh" (almost reminding me of a frightened Blackbird) or an equally harsh "tsherr! tsherr!" They are easily distinguished at a distance from birds of the same coloration by their Touraco-like habit of repeatedly flirting up their tail, in which they indulge when settling in a tree or calling. In the lowlands I met with them between Chimbuya and the Umtefu, between Chibabava and Muchukwana, and at Bimba. In my specimens the irides have been brown and the bare skin round the eyes pale grey. Length in the flesh from 13 to 14·2 inches. The stomachs examined contained beetles and numbers of large hairy caterpillars. Odendaal has recently sent me a young male with deep grey breast, obtained near Chirinda on Jan. 1st.

203. COCCYSTES CAFER. Levaillant's Cuckoo.

Rh. Stanley obtained a specimen of this Cuckoo, a female, near Mafusi on April 13th, 1906. It is now in the British Museum.

204. CENTROPUS BURCHELLI. Burchell's Coucal.

Chindao: "Igudu-gudu" (in imitation of the bird's loud repeated call). Singuni: "Umfuku."

Rh., P. A typical nest of this bird, found on September 30th, 1906, near Chirinda, may be worth describing in detail. It was placed in the centre of a dense thicket of *Bauhinia galpini* eight feet from the ground and was almost impossible to be got at except with the aid of an axe. It was quite a haystack of a nest, 20 inches deep by 12 wide, constructed of a mass of dry grass, twined very loosely together into a flimsy shell, with a large opening in the middle of one side. The cup was lined with a few leaves of *Bridelia*, *Brachystegia*, and *Bauhinia*, which just served to prevent the eggs, four in number and pure white, from falling through. The eggs are always rounded and measure from 34 to 37 mm. in length and from 24·5 to 27 mm. in breadth. The irides of all my specimens have been carmine, and the feet dusky grey or blue-grey, somewhat blackish on the toes. The base of the gonys is whitish. A fair-sized bug, a migratory locust, three or four snails (including fragments of a particularly large species of *Achatina*), beetles, and grasshoppers have been amongst the contents of the stomachs examined.

My Salisbury (Mashonaland) specimens prove to be *Centropus flecki* Rchw.

205. CENTROPUS NIGRORUFUS. Natal Coucal.

Rh., P. During the past year I have noticed this bird near Chirinda, at Maruma, and in the Jihu. The stomach of one which I obtained some time ago contained beetles.

206. TURACUS LIVINGSTONII. Livingstone's Touraco.

Singuni: "Igwalagwala." Chindao: "Ihurukuru."

Rh., P. I have noticed that these Touracos call most in the morning and evening, particularly the latter. One individual will start the loud quick "ká-ka-ká-ka-ká" note, half a dozen others will join in, and finally all will end up with a regular chorus of the crowing note—really quite deafening when close at hand. I noticed this Touraco during September in a wooded glen near Maruma and in one of the forest-patches in the Chikamboge Valley. In the lowlands I came across it in December and January amongst the dense-foliaged trees that line some of the dry streams between the Umtefu and Chibabava, and found it to be not uncommon in the Madanda forests.

207. GALLIREX PORPHYREOLOPHUS. Purple-crested Touraco.

Singuni: "Igwalagwala." Chindao: "Ihurukuru."

Rh., P. In March and April the Purple-crested Touraco constantly visits the outskirts of small outlying forest-patches for the sake of the berries of *Echebergia meyeri*, which are then ripe. Usually it prefers the open woods. In the lowlands I found it to be comparatively plentiful between

Chibabava and Chironda, and noted it at a sand-stream between the Mwangezi River and Chimbuya, at Chibabava, and in the *Brachystegia* woods near Arucate. On November 4th I examined a nest of this species, out of which the young birds had recently flown, though they were still hanging about the spot. It was the slightest of structures, about 7 inches in diameter, and exactly resembled that of a Turtle-Dove, just a few small twigs laid on the thick horizontal bough of a *Bridelia* overhanging a stream, twenty feet from the ground. The nest contained the outer husk of a Cape gooseberry (*Physalis*), and the quantities of droppings all round were composed chiefly of the wild fig. Dierking also found a nest in November at Maruma, and sent me one of the young birds. My tame bird ate the eggs of a *Haplopelia* which had been laid in my aviary.

208. SCHIZORHIS CONCOLOR. Grey Touraco.

Singuni: "Umdhluwe" or "Umxuwe" (the "x" representing a Zulu click).

I heard a "Go-away Bird" on the Mwangezi River on the 25th of November, 1906. The stomach of my Mashonaland specimen contained young leaves and a large seed.

209. PŒOCEPHALUS ROBUSTUS ANGOLENSIS. Brown-necked Parrot.

Chindao: "Chiwhangwa." Singuni: "Ihokwe" or "Isikwenene" (these three names being applied to all Parrots).

Rh., P. In August in the Jihu a few scattered individuals were to be seen every evening flying high overhead and making for the direction of Chirinda. The local natives informed me that they knew of no roosting-place in the Jihu itself, and that the Parrots were in the habit of doing the journey, fourteen miles from where I was encamped, twice daily. In November 1906 and in the following January I met with these Parrots in the Zinyumbo Hills and on the Umswirizwi, the latter being also, I believe, Chirinda birds.

210. Pœocephalus fuscicapillus. Brown-headed Parrot.

Rh., P. Two of these Parrots flew over my homestead near Chirinda on August 29th. It is the common species of the low veld, and I came across it constantly in travelling from Inyajena to Chibabava and on to Chironda, as well as in the Madanda forests during December and January. It might usually be heard all day in the dense foliage of the large Trichilias and other trees in parties of as many as six or seven together. Under these circumstances a continuous conversation of comparatively pleasant conversational notes is kept up, the shriek uttered in flying being somewhat harsher, though less piercing, than that of our other two species. It is far tamer than either of these and will usually permit anyone to pass under the tree without moving, though even then its green coloration renders it very difficult to detect amongst the dense foliage. A female obtained near Chibabava in December measured 9·5 inches in the flesh; the upper mandible was blackish with a somewhat paler base, the lower dull white. The feet, cere, and the bare skin round the eye were very dark grey and the irides yellow. The stomach contained seeds and the remains of fruit.

211. Pœocephalus meyeri. Meyer's Parrot.

Rh., P. I noticed this Parrot several times in the Inyamadzi Valley on September 8th, 1906, and again at the end of November in the Zinyumbo Hills and on the Mwangezi River.

212. Strix flammea. Barn-Owl.

Rh. Odendaal noted one of these Owls on April 3rd, 1907, in a grove of *Eucalyptus saligna* close to my homestead. Owls are among the few birds which are never eaten by the natives.

213. Strix capensis. Grass-Owl.

Rh. Odendaal obtained an immature female of this Owl near Chirinda on June 14th, measuring 13·85 inches. The bill was "whitish with brown patches from base to tip, the cere was very dark brown, the irides were almost black, and the feet blackish grey." The back in this specimen is black with only faint traces of the white spots.

214. Syrnium woodfordi. Woodford's Owl.

Singuni: "Isikova"; occasionally, to distinguish it from other species, "Isikova esincani" (Small Owl) or "Isikova esibungwini" (Wood-Owl).

Rh. Woodford's Owl occurs in wooded glens as well as in Chirinda, and its call may frequently be heard at night, when it is repeated with peculiar insistence on the occurrence of any disturbance or noise, as when a leopard calls or a party of Hornbills flies off on the approach of a lantern. My tame bird of this species forms a great contrast in its habits and disposition to an individual of *Bubo maculosus* which is its fellow-prisoner. Unlike the latter, it remains exceedingly sleepy all day and is usually to be found with eyes half closed and head well down between the shoulders. If spoken to it invariably turns its head slightly and replies by a rapidly-repeated slight clapping of the bill, accompanied by a rapid blinking of the nictitating membrane, the eyelid remaining half closed all the time. It will sometimes keep up a long friendly conversation in this way if one continues to reply, never, however, opening its eyes or rousing itself in the least. At night when awake it quite justifies the Kafir idea of Owls as the most foolish of birds, flying invariably to the wrong place for its food, and sometimes backing away from it in alarm when it has found it. It will usually hold its food up in one claw and eat somewhat after the manner of a Parrot, transferring it to the other when tired. It is very tame and greatly enjoys having its head scratched, particularly between the eyes, standing quietly with its beak on the table while this operation is in progress, and uttering a contented little chirrup, very different from its usual wearisome hiss. It is particularly fond of bathing, completely submerging its face and shaking its head vigorously from side to side, splashing the water in all directions and incidentally sprinkling its plumage. When five months old it still differed from the adult specimens in my collection in the larger size of the triangular white markings of the upper surface, and the fact that the lighter bars and markings were throughout paler and more conspicuous. In these adults the bill, cere, and feet were Naples yellow, the former with a duskier commissure; the soles brighter, almost gamboge. The opening of the ear and the bare skin round the eye were both pale Naples yellow, the latter tinged with green. 14·25 (in two cases) and 14·8 inches represent the length in the flesh of three specimens recently measured.

215. Bubo maculosus. Spotted Eagle-Owl.

Singuni: "Isikova." Chindao: "Ikwikwi" (the latter name appears, however, to be often used with special reference to *Bubo lacteus*).

Rh., P. I heard this Owl calling on the Kurumadzi River in August and noted it again on the Lusitu in September, and at Arucate on December 5th, 1906, as well as at frequent intervals on the hills round Chirinda. I have had one of these Eagle-Owls in captivity for more than eighteen months. It was winged when harrying a poultry-yard, and my Kafirs were at first in deadly terror of it on account of their superstitions in connexion with these large Owls. Certainly when endeavouring to frighten an intruder it is most fierce and ominous-looking, forming a very great contrast to my *Syrnium woodfordi*. It has now lost much of its old fierceness of demeanour towards myself and others to whom it has become accustomed; but if a stranger approaches the cage it ruffles up its feathers in quite its old fashion, dances slowly first on one foot, then on the other, snaps its bill repeatedly and loudly and hisses, swells its throat-feathers in and out, at the same time moving its tongue backwards and forwards, while it glares steadily at the intruder in the most ferocious manner with its great yellow eyes. Usually it remains stock still on its perch all day with its eyes half closed and its feathers smoothed down, looking like a bit of old weathered branch; but it is very vigilant, and if a dog passes, or especially my monkey (towards which it has conceived a great aversion), it promptly assumes its most truculent manner. It will often take food from the hand, generally, however, after a slightly hostile demonstration. It will finish a Guinea-fowl in two nights and has on one occasion eaten practically the whole of a wild Duck (skinned) in one. It calls constantly at night—two notes, the first invariably double, the second long-drawn—"Hoo-oo hoooo!"—a pleasing cry. A male measured 18 inches in the flesh and its stomach contained two shrews. The feet in all my specimens have been dull or light grey.

216. **Bubo lacteus.** Verreaux's Eagle-Owl.

Singuni: "Isikova esikulu" or "Umvus' inkunzi" (wake-the-bull). Chindao: "Ikwikwi" or "Izizi."

Rh., P. During the first half of August one of these fine Owls visited the neighbourhood of my camp on the Kurumadzi for some days. It frequented some large *Pterocarpus* trees scattered through the grass-jungle and kept up its hollow sepulchral hoot all day and all night. Like my tame specimen of *Bubo maculosus* it was very wakeful, even in the daytime, and very unapproachable, at once making off with a soft flapping flight if approached to within eighty yards, and perching on one of the larger bare horizontal branches of some tree further on. The hoot at a distance is somewhat like the call of a leopard, but more broken and jerky—a deep hoarse repeated grunt, which, especially at close quarters, cannot be mistaken. My natives, of whom I had a large gang sleeping under an open shelter, were extremely nervous, believing that the presence of the Owl foreboded disaster, and kept up large fires all night. Actually there were two lions about at the time and a young native was taken from a neighbouring village. On September 8th I was ascending the wooded slope of Umtereni, near the Upper Buzi, when an individual of this species flew over with what appeared to be a black Kafir fowl in its claws. This was at noon on a very hot day. It had hardly settled in a dense-foliaged tree lower down the glen when a pair of *Aquila wahlbergi* descended with loud cries and circled about the Owl, one of them finally settling on the same branch with the evident intention of robbing it. The Owl was greatly excited and was keeping up its deep grunting hoot without intermission, but unluckily the Eagles saw me at this moment and made off in ever-ascending circles into the air.

A fine male of this species was brought to me on July 29th, 1906, by a Zulu, who had shot it as it was endeavouring to effect an entrance to his hen-roost near Chirinda. It measured 24 inches in the flesh; its bill was very pale green-grey, the cere slightly darker with a distinct tinge of dusky cobalt; the base of the claws was like the cere, but with blackish tips; the soles were dirty whitish; the skin of the upper eyelid was greenish white (practically the same as the bill), tinged in the centre with a slightly wattled patch of rose-pink.

On April 11th, 1907, the same native brought me two nestlings in down. The nest, he stated, was on the ground amongst long grass. These birds used to utter when feeding a harsh low chirp and a feeble mouse-like squeak, and when annoyed they could already hiss most vigorously. They also possessed the low stridulous hawk-like note uttered by *Syrnium woodfordi* when hungry. When hungry themselves they used to become quite energetic, tumbling over each other and mouthing with their beaks over one's fingers, each other, and the sides of the basket in which they were confined. They were covered with long buff-coloured down, that on the face being much shorter and whiter, while its distribution there in two separate ridges connecting the eyebrow with the cere added greatly to the ugliness of the birds. They had a curiously vulturine appearance, and a high fringe of down (growing only along the centre of the crown, but overhanging and completely hiding the bare tract on either side as far as the orbits) formed a great contrast to the comparative bareness of the face. The bill and cere were pale fleshy pink, the ridge of the latter duskier. The feet were pale dusky, lightest below the ankle-joint (where feathers were already appearing), and becoming duskier towards the ends of the toes. The tarsi were scaled, with only faint traces of budding feathers.

217. **Scops capensis.** Cape Scops Owl.

Chindao: "Chidzizimbori."

Rh. Odendaal secured a male of this species on July 31st, 1907, near Chirinda. Its bill was "black, the cere was dusky, the irides were deep gamboge, the eyelids brown, and the feet grey-brown."

218. **Falco subbuteo.** Hobby.

Rh. On March 22nd I noted three Hobbies flying over in the neighbourhood of Chipete. I had only previously seen this bird on two or three occasions in Gazaland, though I obtained a number of specimens near Salisbury in January 1899. In the gullet of one of these I found a *Terias* butterfly, almost intact.

219. **Tinnunculus rupicola.** South-African Kestrel.

Singuni: "Ukozi." Chindao: "Igodzi." (These terms are applied indiscriminately to nearly all Hawks.)

Rh., P. A male of this species which I shot near Chirinda on June 25th measured 12·5 inches in the flesh, and its stomach contained a number of locusts.

220. **Tinnunculus dickinsoni.** Dickinson's Kestrel.

Rh. Odendaal obtained a male of this Kestrel near Chirinda on May 21st, 1907. It measured 12·85 inches in the flesh; its bill was "blackish (bluish at base); the cere, base of lower mandible, gape, bare skin round eye, and feet were deep gamboge; the irides deep vandyk-brown."

221. **Aquila rapax.** Tawny Eagle.

Singuni: "Uqosi." Chindao: "Igamo." (These two names are applied to many of the larger Eagles.)

Rh., P. In the lowlands from November to January I noted this fine Eagle in the Zinyumbo Hills, at Gwara-gwara, and between the Muzala and Inyajena. On September 13th I watched an individual at Maruma perched on a low acacia beside a Kafir kraal, with an eye on the fowls, which were scratching away within a few yards The scene reminded me of a common native tradition professing to account for the relations between Kites and Fowls. The Kite, they say, formerly lived with the chickens in perfect amity, till they lost a knife which he had entrusted to their care. Ever since, the chickens have continued scratching up the ground in their feverish endeavours to find that knife, while the Kite has continued to make them pay for losing it.

222. Aquila wahlbergi. Wahlberg's Eagle.

Rh., P. On October 30th, 1906, I found a nest of this Eagle near Chirinda placed about twenty-five feet from the ground in the thick fork of a large *Faurea saligna* standing close to a stream. It was a rough stick-structure 18 inches wide by about 15 deep. Outside was a mass of dry *Faurea*-twigs, supplied in abundance by the tree itself, which had been scorched by the grass-fires about three months before; inside, or rather above, for the nest was flat and cupless, was a dense layer, 3½ inches thick, of *Faurea*-leaves still attached to the ends of the twigs, which had been just coming into bud when picked. This indicated a considerable lapse of time between the completion of the nest and the laying of the egg, as the tree was in full bloom. The egg, which was quite fresh, was dirty brownish white in ground-colour, thickly freckled with rather light reddish brown, and clouded, chiefly on one side, with richer reddish, perhaps from a blood-smear. An egg which I took near Salisbury on November 12th, 1898, was very different, the ground colour being dirty white, with large pale blotches and freckles of pale brown and fainter blotches of brownish grey. The nest was very much the same in construction and was also placed about twenty-three feet from the ground in the fork of a large *Brachystegia* growing beside a river. The eggs measured 60 mm. each in length, by 46 and 47·7 mm. in breadth. The iris of my Mashonaland female was umber. The feet, cere, gape, and base of the lower mandible were of a rather bright Naples yellow, the last three slightly tinged with green, while the orbital ridge and other bare skin round the eye were of a dull olive-green.

223. Lophoaëtus occipitalis. Crested Hawk-Eagle.

Chindao : "Ifinye."

Rh., P. On September 13th, near Maruma, within quite a small radius, I saw several of these Eagles, including one in light immature plumage, for the most part wheeling high overhead with their weird scream "Queer"! In heading against the wind they tack a good deal, giving five or six flaps, then gliding off slightly from the wind, then taking a few more beats up against it, and so on, the scream being uttered every few seconds. I noted the bird on the Kurumadzi in August and November, and at Chibabava, following the river, in December.

224. Haliaëtus vocifer. Sea-Eagle.

P. I saw one of these fine Sea-Eagles standing on a sand-bank at the edge of the Buzi River at Gwaragwara, on December 21st, 1906.

225. Helotarsus ecaudatus. Bateleur.

Rh., P. In the lowlands I noted this fine Eagle on November 26th between Chimbuya and Umtefu, and again at the mouth of the Buzi on December 22nd. It is evidently not averse to carrion, for an individual, during a period of mortality amongst my small stock, used to constantly frequent the spot where the dead goats were thrown out. I had just crossed the upper Buzi on September 8th, when down swooped a fine pair of Bateleurs, the male in hot pursuit of the female (at once distinguishable by the broad black edging to its secondaries), with a tremendous whistle of the wings, and, after nearly touching the tree-tops, made off (as described by Marshall, 'Ibis,' 1900, p. 258), swooping and twisting and circling without a flap of the wings to a great height.

226. Gypaëtus ossifragus. Southern Lammergeyer.

P. A fine specimen of this bird was obtained by Dierking at Maruma early in 1906.

227. Asturinula monogrammica. African Buzzard-Eagle.

Rh., P. Chipinga and Spungabera are localities in which I have recently noticed this species, and I have lately received a male from Odendaal, shot by him near Chirinda on April 9th, 1907. It measured 12·8 inches in the flesh.

228. Buteo augur. Augur Buzzard.

Rh. On the 13th of September, 1906, Odendaal secured a specimen of this Buzzard, a female in immature plumage, near Chirinda. Its bill was blackish, its cere, feet, and irides were yellow. It measured 21·1 inches in the flesh, and its stomach contained sixteen of the common red migratory locusts and three pupæ.

229. Milvus ægyptius. Yellow-billed Kite.

Singuni: "Inkoinyana." Chindao: "Indjerere." Chizwina (Mashona): "Ingavi."

Rh., P. I shot a male Yellow-billed Kite, which had evidently been recently breeding, on the Kurumadzi on August 2nd, 1906. This was about a month earlier than I have ever seen the bird in this district before. The natives would have it that it was not a Kite, but an Eagle, "because the time had not yet come for the Kites to leave their holes"! I again saw two examples near Chirinda on the 16th of the same month, and on the following day six, all pursuing swarms of locusts, while from that time they became comparatively plentiful. They were common at Melsetter in September, on the 24th of which month I saw one with a snake in its talons, at which it took an occasional leisurely pull as it sailed slowly past. In the lowlands from November to January I found them occurring at constant intervals throughout from the Jihu to Gwaragwara, and again from Chibabava south to Arucate. They always flock to grass-fires, one Kite after another appearing on the scene directly the fire is lit, while their graceful gliding flight answers the slightest turn of the tail. It is a most pleasing sight to watch a Kite wheeling in circles in the smoke, while it turns its head, now to one side, now to the other, to ascertain whether the dusky particles flying past are merely scraps of ash or more substantial fare. When it sights prey it suddenly hastens its flight, still without a flap of the wings, upwards, downwards, or sideways towards the object. This, if above, it seizes in its bill and, transferring it to its claws, eats it as it flies along without the least interruption of its gliding motion. Sometimes, if the insect is not sighted till the bird is almost on it, the turn to seize it will be sudden, or the bird may turn a somersault in securing it, but here again every movement is characterized by the most perfect grace.

230. ELANUS CÆRULEUS. Black-shouldered Kite.

Rh. I have met with this bird fairly frequently at various localities in Northern and Southern Melsetter, particularly during the past year.

231. ACCIPITER MINULLUS. Little Sparrow-Hawk.

P. I secured an immature male of this species on August 11th, 1906, on the Kurumadzi, perched on a tree in the grass-jungle. The cere, gape, and eyelids were light yellow tinged with green, the irides and feet deep gamboge, and the bill and claws black. It measured 8·85 inches in the flesh and the stomach contained the remains of a Sun-bird.

232. ASTUR TACHIRO. African Goshawk.

Rh. This is the only Hawk which I have found habitually entering the forest of Chirinda. A male, secured on June 26th, 1906, while harrying the fowls at my homestead, measured 15 inches in the flesh, and its stomach contained the remains of a bird, apparently *Macronyx capensis*. The iris in this specimen was greenish yellow, suffused with green immediately round the pupil, and the tarsi and feet were Naples yellow tinged with green on the toes. In a very old male, measuring 14·5 inches in the flesh, trapped in the forest and brought to me alive on July 25th, the iris, tarsi, and feet were all orange-yellow. In both the eyelids were orange lined internally with a rim of blackish, the bill was black or blackish, pale blue towards the base, the gape yellow, while the orbital ridge, cere, and extreme base of the bill were dull olive-green, and the claws blackish.

233. Phalacrocorax africanus. Long-tailed Cormorant.

Singuni: "Inyaopetana." (*P. lucidus* of my last paper, 'Ibis,' 1907, p. 304.)

Rh., P. In the lowlands I met with this Cormorant on November 25th at the pools near Zinyumbo's kraal and found it to be quite plentiful, mostly in full black plumage, at the large pools, already mentioned, near Chibabava. There it was to be found both in the water and perched, sometimes in parties of four or five, on the branches of the large trees on the banks. Two females measured 22·1 and 22·6 inches respectively in the flesh and the stomachs contained the remains of fishes and of insects, the latter probably aquatic. The irides were carmine, the bare patch round the eye was yellowish grey; the lower mandible pale yellowish brown and the upper deeper brown, both with darker transverse markings, the actual culmen being blackish.

234. Pelecanus roseus. Eastern White Pelican.

P. This Pelican appears to occur on our coast, as I have been shown a portion of a skin which was stated to have come from the mouth of the Buzi.

235. Ciconia nigra. Black Stork.

Rh. On September 2nd, 1906, three of these birds settled for a few minutes on the summit of the higher trees on the Chirinda outskirts.

236. Scopus umbretta. Hammerkop.

Singuni: "Itegwana."

Rh., P. The only locality in which I noted this bird during my low-veld journey was on the Buzi River at Chibabava.

237. Ardea cinerea. Grey Heron.

P. On 21st December I saw quite a number of these Herons on the sandbanks between Malata and the mouth of the Buzi.

238. Ardea goliath. Goliath Heron.

P. Three enormous Herons with very dark under parts, probably referable to this species, passed me flying towards the river on the evening of December 11th near Chibabava.

239. Ardea purpurea. Purple Heron.

P. On the 2nd and 12th of December I several times flushed these birds in some large pools near Chibabava, always solitary individuals and very shy, which got up well out of range and flew three or four hundred yards before settling again. A male which I secured on the 12th measured 36·8 inches in the flesh and its stomach contained a dragon-fly, the remains of a fish, and the débris of aquatic insects. The irides, both in this specimen and in a female shot in Mashonaland in 1898, were very pale lemon-yellow. In the male the bare skin of the face was greenish yellow, becoming dusky brown below the eye; the culmen was blackish, the base of the lower mandible greenish yellow, its apical half, as also the commissure in the upper, a warmer yellow. The tibio-tarsus was pale gamboge, changing to rather duller yellow on the back of the tarsi and on the soles, the front of the tarsus and toes deep sepia. In the female these colours were represented by pale green and dusky olive-green respectively.

240. Herodias alba. Great White Egret.

Singuni: "Intechana."

P. On December 2nd and 12th I found quite a number of these large White Egrets on a series of pools near Chibabava, looking very handsome and conspicuous at a distance. They were standing about singly or in twos or threes in the water amongst the sedge, and when disturbed flew to the tops of the higher trees. They were very shy. I noted them again at Gwaragwara.

241. Bubulcus ibis. Cattle-Egret.

Chizwina (Mashona): "Chifudza-ngombe."

Rh. I noted a pair of these birds on the Haroni River on September 26th, 1906, and I have little doubt that the birds referred in my last paper ('Ibis,' 1907, p. 305) to *Herodias garzetta* really belonged to the present species.

242. Ardeola ralloides. Squacco Heron.

Chindao : "Chipugwa-pugwa."

P. On the 2nd of December I noted quite a number of these birds near Chibabava at the pools which I have already mentioned, chiefly in parties of four or five. The stomachs of two of my specimens contained fish, a large spider, and a grasshopper.

243. Erythrocnus rufiventris. Rufous-bellied Heron.

Singuni : "Inyakola encani."

P. These birds were fairly common about the pools between Chibabava and Mangunde on December 2nd. They would fly, when flushed, for fifty yards or so—seldom much further—and settle down quietly in shallow water amongst the sedge. I saw one squatting down on the point of a dry branch projecting from the water. My specimen, a female, has much less chestnut on the upper wing-coverts than have any of the specimens in the British Museum. It measured 18·55 inches in the flesh, and its stomach contained the remnants of beetles and what looked like a portion of the front wing of a butterfly. The tarsi and toes were light gamboge tinged with olive, the claws olive-grey; the iris was gamboge with an outer ring of orange. The bill was for the most part dusky olive-grey, becoming nearly black at the point, but the base of the lower mandible was bright green and the whole of its median portion, as well as the upper mandible immediately along the commissure, was very pale brown. The skin below and just above the eye was carmine-pink, changing into pale orange and yellowish green in front towards the nostril.

244. Ardetta payesi. Red-necked Little Bittern.

P. In December I flushed a small Bittern from the sedge of the large pools near Chibabava which from its slaty back and buff coverts I took to belong to the present species.

245. Hagedashia hagedash. Hadada.

Singuni : "Ingangá" (The "ng" pronounced softly like French nasal "n").

P. Hadadas were very common on the river at Chibabava from November to January, and might often be seen on dead branches overhanging the water. Choruses of their bleating Trumpeter-Hornbill-like cries, which the native name well imitates, were to be heard at all times of the day. I again found them near Boka.

246. SARCIDIORNIS MELANONOTA. Knob-billed Duck.

Singuni: "Isekwi."

On December 2nd I came on a pair of these birds feeding in a pool near Chibabava in company with *Dendrocycna viduata, Herodias alba,* and *Ardea purpurea.*

247. DENDROCYCNA VIDUATA. White-faced Duck.

Singuni: "Inyakakene."

P. I found these Ducks exceedingly plentiful in December on the pools between Chibabava and Mangunde, in pairs or in parties of from half a dozen upwards. In one case two flocks, numbering twenty-five and forty-nine respectively, rose from within a few yards of each other, and on some occasions (a shot fired at some distance being enough to flush them) there must have been from a hundred to a hundred and fifty of these Ducks in the air together. They have two whistling notes, or more rarely three, frequently uttered by the whole flock together, as it flies along, sometimes in more or less wedge-formation, sometimes not. They were easy to shoot, for when flushed they would circle backwards and forwards two or three times over the swamp, and seldom went more than a few hundred yards before again descending. A breeding female, one of a pair shot on December 2nd, measured 18·55 inches in the flesh. The tarsi, feet, and webs in all my specimens were light bright blue-grey, and the nails, the transverse scutes of the toes, and the scales covering the front of the tarsus black, the divisions between the scales remaining pale blue-grey; the irides were deep burnt sienna. One of the stomachs examined contained a small larva and grit, and in both crop and stomach were large quantities of a small black seed.

248. ALOPOCHEN ÆGYPTIACUS. Egyptian Goose.

Rh., P. I had in my aviary, for a short time during April of 1905, a gander of this species, which with two geese had been obtained by Mr. J. Ballantyne from the Sabi. It is said to be quite common on that river, and I noted three on the Mwangezi at the end of November. The male examined by myself measured about 29 inches in length in the flesh.

249. ANAS SPARSA. Black Duck.

Singuni: "Isekwi."

Rh., P. This undoubtedly is the commonest Duck in the higher portions of the country. I have come across it on several occasions of late and have had examples brought to me alive by natives, who are in the habit of snaring them. The Jihu, the upper Buzi, and the Umswirizwi headwaters near Chirinda are amongst the localities specially noted. The length of one of my specimens, measured in the flesh, was 22·25 inches, and of another, a female, 20 inches. These Ducks thrive fairly well in captivity.

250. VINAGO DELALANDII. Delalande's Green Pigeon.

Chindao: "Ihuriti."

Rh., P. These birds were present in some numbers in the small forest-patches of the Chikamboge Valley during September 1906. They are usually very shy, but when a common round-leafed fig-tree ripens its fruits they do not hesitate to settle in the branches and to commence feeding, even while a person is moving about underneath. The birds in my aviary converse with one another in low grunting notes. Their sidelong awkward shuffle along the branches contrasts with the neat and confident forward march with out-turned toes of *Haplopelia larvata*. Two of these birds in my collection measured 11·1 and 12·5 inches respectively in the flesh.

On the 20th of November Odendaal found a nest high in a tree in the open woods near Chirinda, trapping the bird on it. There were two white elliptical eggs, measuring 32 by 25 mm.

251. TURTUR SEMITORQUATUS. Red-eyed Dove.

Chindao: "Igówara." Singuni: "Ikopoya" or "Ijuba," the latter name, however, applying to Doves in general.

Rh., P. On the Kurumadzi in August and November these large Doves were always to be seen perched conspicuously on tree-tops in the bush surrounding Kafir clearings, feeding in the fields, or, in the early morning, congregated in parties of seven or eight on the banks of the streams. At Maruma they were very common in September in flocks of from twenty to forty individuals, feeding about the homestead, in the pig-styes, &c., like tame pigeons. In the lowlands from November to January I met with them frequently from Mount Singuno to Chimbuya, but thence to the Umtefu *Turtur damarensis* appeared to be equally common. Throughout the Madanda forests and in the neighbourhood of Chibabava they were constantly to be seen and heard, and I again met with them in considerable numbers drinking at some water-holes in very dry country between Chironda and Boka.

A male in my collection measured 13·25 inches in the flesh, a female 11·75 inches. In both the bill was black, the base with a whitish bloom; the bare skin round the eye was grey, its wattled portions and the eyelids dull crimson, and the irides were coppery pink. The feet were crimson in the male, purple in the female.

252. TURTUR DAMARENSIS. Damara Turtle-Dove.

Chindao: "Idekùruru" (in imitation of its note). Singuni: "Igugulwana" or "Ijuba."

Rh., P. I heard one of these Doves calling repeatedly in the open bush on the Umpudzi River (Umtali District) in April 1907, in the dead of night. A curious courtship, through the wires, took place during July and August between a wild bird and one that had been in my aviary for many months. In the low veld I noted this Dove in some numbers between Chimbuya and the Umtefu, and again at Bimba and Inyamita. Two males in my collection measured 10·4 and 10·5 inches in the flesh, respectively, and a female

10·2 inches. This is *Turtur capicola* of my paper in 'The Ibis' for 1907, p. 306.

253. TURTUR SENEGALENSIS. Laughing Dove.

Rh. On March 7th, 1906, I saw one of these Doves between Chirinda and Spungabera, in thorn- and grass-jungle country, and Odendaal has recently sent me a female, obtained by him near Chirinda on Jan. 12th, 1908.

254. TYMPANISTRIA BICOLOR. Tambourine Dove.

Singuni: "Isibambalam." Chindao: "Chipuri."

Rh., P. Both in the dense bush of the Jihu, where it is plentiful, and on the outskirts of Chirinda this species will venture out a few yards to feed in cultivated ground, but it is exceedingly shy and retreats into the thicket at the slightest alarm. I noted it at Brent's, on the Lusitu, in September, and at Arucate early in December. In the latter month I also shot a breeding male in the open woods at Chibabava, the only occasion on which I have found the birds in this kind of country. Fifteen of them averaged 8·61 inches in the flesh, with a variation of from 8·2 to 9 inches. A number of stomachs examined contained seeds of *Sorghum*, *Eleusine*, *Albizzia*, *Celtis*, and two species of *Croton*. The bare skin round the eye is dark grey.

255. CHALCOPELIA AFRA. Emerald Spotted Dove.

Singuni: "Isibambalama." Chindao: "Chipuri."

Rh., P. Unlike the preceding species, this Dove is very tame and confiding, and is always to be seen walking about and feeding in cultivated ground. It has increased noticeably in numbers in the neighbourhood of Chirinda during the past year, as well as being found fairly commonly throughout all parts of the country which I have visited—northwards to and beyond Melsetter and eastwards to the coast. It is common in the grass-jungle on the Kurumadzi, but particularly in the Kafir clearings, where I found it extremely tame, moving on only a few yards when flushed at very close quarters. In the low veld from November to January I noted these Doves particularly at the Mwangezi and Umtefu

Rivers, and at various points between the latter stream and Chibabava. In the last-named locality they were plentiful, both in cultivated ground and at the edges of pools, whither they had evidently gone to drink. Bimba was another locality at which I noted them, while at Arucate they were again quite common. Four of these birds averaged 7·9 inches in the flesh, with a variation of from 7·65 to 8·12 inches. Out of five specimens in my collection the wing-spots were green only in one, an adult female, not breeding, shot on the Kurumadzi on August 4th. In the colour of its bill &c. it exactly resembled the blue-spotted birds, of which I shot three at about the same time in the same neighbourhood. I do not think that they can be regarded as specifically distinct. The feet vary from light crimson to dull purple; the bill is pale reddish brown or pale brown-madder, the base blackish tinged with purple.

256. Haplopelia larvata. Lemon-Dove.

Singuni: "Igwanjiya."

Rh., P. This Dove appeared to be by no means scarce in portions of the denser bush on the Kurumadzi in August and November. I have shot a breeding male as late as May 10th, and a female with well-developed ovaries on June 14th—almost mid-winter. *Celtis*- and *Croton*-berries have been present in most stomachs which I have examined, with, in one case, the seeds of a large climbing *Gouania* and as many as eleven small snail-shells. My specimens seem all to belong to the Nyasaland form, which was separated by Capt. Shelley as *Haplopelia johnstoni* ('Ibis,' 1893, p. 28, pl. iii.).

257. Francolinus sephæna. Crested Francolin.

Rh. Odendaal has recently sent me a specimen of this bird, a cock obtained by him near Chirinda on July 9th, 1907. It measured 13·5 inches in the flesh; its bill was "blackish, bare skin round eye pale blue-grey, a bare patch above the ear brownish grey, irides dark brown, and feet light vermilion."

258. FRANCOLINUS SHELLEYI. Shelley's Francolin.

Chindao: "Idambira." Singuni: "Itendele."

Rh., P. A female of this common Francolin measured 14·75 inches in the flesh.

259. PTERNISTES HUMBOLDTI. Humboldt's Francolin.

Singuni: "Inkwali." Chindao: "Chikwari." (Both names being derived from the bird's call.)

Rh., P. This is one of our earliest birds to call in the morning, isolated notes being not infrequently heard an hour or more before dawn. I have found it common at Maruma, at Brent's on the Lusitu, and on the Haroni River, all in September, and, in the lowlands, I noted it at Inyajena and on the Mwangezi. In 'The Ibis' for 1907, p. 309, it was erroneously referred to *Pternistes nudicollis*.

The "Inkwali" is looked on by the natives as an exceedingly selfish bird, and they have a common proverb "Aik' inkwali epandel' enye" (no "Pheasant" scratches for another—"every man for himself").

260. COTURNIX DELAGORGUEI. Harlequin Quail.

Singuni: "Sigwaqa" (Zulu "q"-click).

Rh., P. This Quail is fairly plentiful with us during the winter, and is trapped in great numbers by the natives in the Umgoza-crop (*Eleusine*), which is invaded by it when ripening in May and June. I have a note to the effect that it was particularly common in the neighbourhood of Chirinda throughout July 1906 and again from the 9th to the 13th of September. Two females in my collection measured 6·9 inches in the flesh and a third 7·1 inches. In the female the upper mandible is light horn-coloured, the lower pale bluish, the feet are pinkish white, and the irides deep ochreous.

261. EXCALFACTORIA ADANSONI. Blue Quail.

Rh., P. Early in January 1906 I not infrequently flushed these Quails singly or in pairs in swampy "vleis" of comparatively short grass on the lower Zona, securing a female on the 3rd of that month.

262. Numida mitrata. East African Guinea-fowl.

Chindao: "Ihanka." Singuni: "Impangela."

Rh., P. These Guinea-fowls are particularly plentiful in old Kafir lands about Chirinda in winter, and I came across large flocks of them in August in the bush on the Kurumadzi, obtaining some very good sport. In the low veld they appeared to be common from the Zinyumbo Hills to the Umtefu, and again about Chibabava in December and January. Some which I reared in my aviary died within a few days of being liberated, when three-quarters grown; they had evidently partaken too freely of a large scarlet bug with which I found their crops crammed. *N. coronata,* to which I had previously referred my specimens, does not appear to occur with us, even Mashonaland (Mazoë) specimens being undoubtedly referable to *N. mitrata.* Apart from the differences in the horn and wattles, the fine barring of the feathers of the lower neck appears to be quite a useful character in distinguishing the present species from *N. coronata,* in which the spotting is carried up practically to the bare skin. This is also the case in young birds of *N. mitrata,* but in these the highest feathers are white with black edgings, producing a conspicuous longitudinally-striped appearance. An adult bird in my collection measured 23·5 inches. The horn is usually ochreous brown, becoming bright red at the base, as are also the tips of the gape-wattles and the base of the bill, the tip of which is greenish grey. The neck is pale greenish blue, becoming dusky cobalt in front. A broad dusky stripe with irregular margins runs down the back of the neck.

263. Guttera edouardi. Crested Guinea-fowl.

Chindao: "Ndhori" or "Ihangatori."

Rh., P. I noted these birds several times in the dense bush on the Kurumadzi during August 1906, though they were then by no means so common there as *Numida mitrata.* In Chirinda I heard them calling throughout the afternoon of November 3rd; but they appear to visit this forest very rarely. Their call is quite distinctive, far more like Aristophanes' βρεκεκεκὲξ than that of any frog I have yet heard, but with the κοὰξ (or rather "tyo-tyok") first, the full call being roughly as follows :—

Tyotyok, tyotyok, tyotyok, tyotyok !
Tyotyok, brekekekeh !
Tyotyok, brekekekeh !
Tyotyok, brekekekeh ! Kerrrr !

I had for some time in my aviary one of these birds which was brought to me by a native from the Jihu. It was very tame from the first, allowing an approach to within a couple of feet of it without a sign of alarm. It fed freely on mealies, *Eleusine*, and other grains. At night when going to roost it became very suspicious and hard to please in its choice of a perch. On landing on a branch it would crane its neck in all directions to ascertain if there was any danger near, then face round the other way and repeat the operation; then, still suspicious, it would fly off to another perch and again investigate. Finally, after trying numbers of perches, its suspicions lulled doubtless more by sleepiness than anything else, it would settle down on its haunches for the night. One of my specimens measured 21 inches in the flesh. Its tarsi were light blue-grey, and its toes dusky. The bill was very pale green-grey, semi-translucent, with a deeper blue-grey base, the point of the culmen brownish. The bare skin of the neck and head were blackish tinged with blue, excepting for the fold of skin and a spot in front of the ear, which were ochreous whitish. The irides were bright carmine.

264. Turnix lepurana. Kurrichane Hemipode.

Rh. Like the Harlequin Quail, these Hemipodes appear to be particularly plentiful and destructive at the time of the ripening of the native *Eleusine*-crop in May and June, and are then trapped in some numbers by means of snares. Two of my specimens measured respectively 5·7 and 5·9 inches in the flesh. The feet are pale greyish or brownish white.

265. Limnocorax niger. Black Crake.

P. I found this Crake in some numbers in December

1906 amongst the sedge in the pools near Chibabava, which I have already had frequent occasion to mention.

266. Balearica regulorum. Crowned Crane.

Rh. About a year ago one of these handsome Cranes was brought to me alive from the Sabi by a native, but unfortunately—for they make excellent pets—it had been too maltreated to survive. This species is stated to be numerous on the Sabi.

267. Œdicnemus capensis. Dikkop.

P. I noted one of these birds in December near the mouth of the Buzi. In a specimen which I obtained in Mashonaland in June 1898 the bill was black with a yellow base, the feet were gamboge, changing to olive-green on the front of the tarsus and the upper surface of the toes, and the irides gamboge. I used to meet with them occasionally in the open " vleis " about Salisbury and usually found them very confiding and easy of approach.

I have a note to the effect that the Chizwina (Mashona) name is " Kanyúrura-howe."

268. Cursorius temmincki. Temminck's Courser.

Rh. Odendaal has recently sent me a specimen of this Courser, a female, obtained by him near Chirinda on May 28th, 1907. It measured 8 inches in the flesh. Bill, upper mandible and point of lower blackish, rest of lower pale creamy white. Irides dark sepia; feet dirty white, darker on toes.

269. Rhinoptilus chalcopterus. Bronze-wing Courser.

P. I shot one of these Coursers, an immature bird in the plumage of *R. albofasciatus*, on Nov. 26th, 1906, in the flats near Chimbuya. It was a solitary individual and rose at our approach, but settled again at once and ran. The bill was blackish, the gape and the base of the lower mandible salmon-pink. The eyelids were the same but tinged slightly with orange, and the shanks were salmon, tinged with grey on the tarsi and especially the toes. The irides were dark brown.

270. **Actophilus africanus.** African Jacana.

Singuni: "Inkukumezara."

Rh., P. I found these birds plentiful on the pools near Chibabava during December, as well as occasionally along the margins of the river. They were mostly in pairs, running about over the old down-flattened sedge. They are not easily flushed and, when on the wing, their flight, consisting of a rapid flapping of the wings, is short (the longest I saw was of nine birds together over a distance of eighty or ninety yards), but by no means weak. So far from flying with their legs dangling, as I have seen described, they hold them stiffly out behind in making these somewhat prolonged flights; the neck is curved back, with the head resting down between the shoulders. In the rushes they make quite a variety of loud noises, the commonest being a "kroo"-ing noise, which often alternates with or is uttered at the same time as a clearer and pleasanter note—evidently by way of a duet, as in the case of *Dryoscopus guttatus*. A male in my collection measured 10·15 inches in the flesh and two females 11·3 and 11·8 inches respectively. In all the frontal shield and bill were pale blue, the point of the bill paler—a dirtier blue; the feet were light slaty grey, the toes slightly paler, and the irides deep brown. The stomachs contained beetles, fragments of aquatic molluscs, a seed, and in each case a quantity of quartz-grit.

271. **Lobivanellus lateralis.** Wattled Plover.

Rh., P. I obtained specimens of this, the common Plover of our highlands, in the low veld on the Umtefu River on January 8th, 1907, noting it again between that river and Chimbuya. It is an easy bird to shoot, the survivors each time merely circling round and round, or settling again close by, and seldom attempting to clear off. The stomach of one of my specimens contained weevils and other beetles, and of another, a large larva, beetles, and, apparently, the remains of a frog.

272. **Rostratula capensis.** Painted Snipe.

P. On December 11th, 1906, I secured a male at some large pools between Chibabava and Mangunde. It was one of a pair which were frequenting the mud of a shady tunnel formed by the meeting of the tall sedge with the dense overhanging foliage of the trees. It measured 10·4 inches in the flesh; its bill was dark brown, its feet were light brown, and its irides umber. The stomach contained a large number of small delicate bivalves.

ADDENDA.

The following species, most of which were fully mentioned in my previous paper, should be added to the present list:—

52 *a.* Anthus pyrrhonotus. Cinnamon-backed Pipit.

Rh. Odendaal obtained a specimen of this bird near Chirinda on July 31st, 1907. Both in coloration and in the length of the hind claw this specimen agrees perfectly with the specimens of *A. gouldi* (Shelley, B. A. ii. p. 308) in the British Museum.

64 *a.* Melocichla orientalis Sharpe.

Rh. Odendaal obtained a specimen of this Warbler, which is new to South Africa, near Chirinda on August 7th, 1907. It agrees with all the Nyasaland specimens in the British Museum, but differs from the type (obtained by Kirk on the Pangani River) in its slightly larger size: wing 3·1 inches, tail 3·5.

67 *a.* Zosterops virens. Green White-eye.

Rh. A White-eye obtained by me on September 26th, 1906, at 7000 feet in the Chimanimani Mountains proves to belong to this species. It was searching the tender red foliage of a large *Brachystegia* in company with a small party of *Estrilda kilimensis.*

69 *a.* Urolestes melanoleucus. Long-tailed Shrike.

Rh. (Ibis, 1907, p. 45.)

122 *a.* Cossypha caffra. Cape Robin-Chat.

Rh. (Ibis, 1907, p. 66.)

131 *a.* Hyliota australis. Mashonaland Flycatcher.

Rh. (Ibis, 1907, p. 67.)

157 *a.* Caprimulgus europæus. European Nightjar.

Rh. A male of this species, measuring 11·5 inches in the flesh, was obtained by Odendaal near Chirinda on Jan. 16th, 1908.

178 *a.* HALCYON CHELICUTI. Striped Kingfisher.
Rh. (Ibis, 1907, p. 284.)

178 *b.* HALCYON CYANOLEUCUS. Angola Kingfisher.
P. (Ibis, 1907, p. 284.)

199 *a.* CHRYSOCOCCYX KLAASI. Klaas's Cuckoo.
P. (Ibis, 1907, p. 291.)

201 *a.* COCCYSTES JACOBINUS. Jacobin Cuckoo.
Rh. One of my specimens, obtained near Chirinda on February 6th, 1906, appears to be typical *C. jacobinus.*

217 *a.* FALCO BIARMICUS. South African Lanner.
Rh. (Ibis, 1907, p. 300.)

220 *a.* BAZA VERREAUXI. Cuckoo Falcon.
Rh., P. (Ibis, 1907, p. 300.)

226 *a.* CIRCAËTUS PECTORALIS. Black-breasted Harrier-Eagle.
Rh., P. (Ibis, 1907, p. 301.)

232 *a.* ASTUR POLYZONOIDES. Little Banded Goshawk.
Rh. (Ibis, 1907, p. 303.)

232 *b.* CIRCUS MACRURUS. Pale Harrier.
Rh. (Ibis, 1907, p. 303.)

232 *c.* GYPS KOLBII. Kolbe's Vulture.
P. (Ibis, 1907, p. 304.)

232 *d.* SERPENTARIUS SECRETARIUS. Secretary-Bird.
Rh. (Ibis, 1907, p. 304.)

235 *a.* CICONIA ALBA. White Stork.
Rh. (Ibis, 1907, p. 304.)

235 *b.* LEPTOPTILUS CRUMENIFERUS. Marabou.
Rh. (Ibis, 1907, p. 305.)

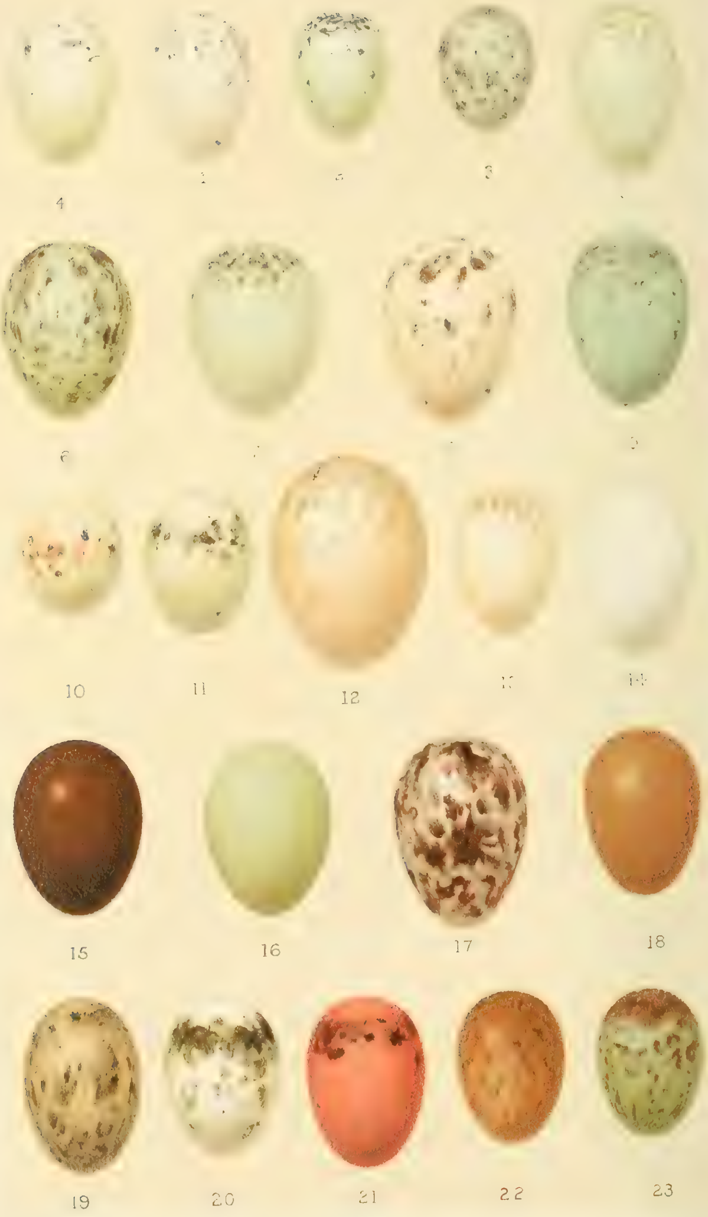
249 *a.* PŒCILONETTA ERYTHRORHYNCA. Red-bill.
Rh. (Ibis, 1907, p. 305.)

253 *a.* ŒNA CAPENSIS. Namaqua Dove.
P. (Ibis, 1907, p 307.)

256 *a.* FRANCOLINUS COQUI. Coqui Francolin.
Rh. (Ibis, 1907, p. 309.)

265 *a.* GALLINULA CHLOROPUS. Moor-Hen.
P. (Ibis, 1907, p. 310.)

266 *a.* OTIS MELANOGASTER. Black-bellied Knorhaan.
Rh., P. (Ibis, 1907, p. 310.)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FIGURES OF EGGS OF
SOUTH AFRICAN PASSERINE BIRDS.

271 *a*. TOTANUS GLAREOLA. Wood-Sandpiper.
Rh. (Ibis, 1907, p. 311.)

272 *a*. STRUTHIO AUSTRALIS. Southern Ostrich.
P. (Ibis, 1907, p. 311.)

EXPLANATION OF PLATE VIII.

Figures of Eggs of South African Passerine Birds.

Fig. 1. *Nectarinia arturi*, p. 32.
2 & 3. *Cinnyris olivacina*[*], p. 41.
4. *Serinus sharpii*, p. 26.
5. *Sitagra ocularia*, p. 14.
6, 7, & 8. *Dryoscopus guttatus*, p. 53.
9. *Laniarius quadricolor*, p. 56.
10 & 11. *Batis erythrophthalma*, p. 93.
12. *Laniarius starki*, p. 60.
13. *Terpsiphone plumbeiceps*, p. 98.
Fig. 14. *Smithornis capensis*, p. 90.
15 & 16. *Cossypha natalensis*, p. 83.
17. *Phyllostrophus milanjensis*, p. 71.
18. *Cossypha heuglini*, p. 84.
19. *Chlorocichla occidentalis*, p. 67.
20. *Phyllostrophus capensis*, p. 68.
21. *Phyllostrophus flavistriatus*, p. 69.
22 & 23. *Erithacus swynnertoni*, p. 88.

XV.—*The Winter Birds of Colorado.*

By W. L. SCLATER, M.B.O.U. (Colorado Springs).

IT has occurred to me that a few notes on the winter birds of Colorado might be of interest to my fellow-members of the B.O.U., especially as little appears in 'The Ibis' on the subject of North-American birds. This is probably due to the fact that there are so many excellent ornithological journals in the States that anything of really novel interest is sure to be published in them. I do not claim for one moment that there is anything original in what I have to say, but perhaps some of the facts may be new to European readers.

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[*] This Sun-bird, previously identified as *C. olivaceus* (above, p. 41), proves on further examination to differ noticeably from typical specimens of that species in the British Museum, all my specimens being intermediate in coloration and measurements between it and *C. obscurus* of the West Coast. Dr. Reichenow, whom I have consulted, considers it to be undoubtedly referable to *C. olivacina* Peters.

The State of Colorado lies very near the centre of the United States, but a little nearer to the Pacific than to the Atlantic. Colorado Springs, which is almost in the middle of the State, is about 750 miles from the head of the Gulf of California, about 850 from Galveston (the nearest point on the Gulf of Mexico), about 950 miles from San Francisco, and about 1650 from New York. It is, therefore, one of the most inland of all the States. It has an area of 103,900 square miles, or a little more than double that of England and Wales. Within this vast area the eastern half consists of open, bare, dry plains, where the country is flat or rolling, and there is hardly any timber except along the river-bottoms. The elevation of these plains (the prairies) rises gradually from 3500 ft. at the Kansas border to 6000 ft. at the foot-hills of the Rockies.

West of the 105th meridian, and rising with extraordinary abruptness from the plains, are the Rocky Mountains, which in Colorado form a kind of knot, whence rivers radiate out in all directions, finding their way to the sea through the channels of the Mississippi, the Rio Grande of Texas, and the Colorado River of Utah and Arizona.

The Continental Divide, separating the waters of the Atlantic from those of the Pacific, runs in a somewhat zigzag line through the centre of the State from north to south, and along this line are to be found most of the higher peaks, of which forty-four range between 14,000 and 14,500 ft. in altitude. In this region are the great mountain parks, open wide valleys rather bare of trees, situated at elevations of from 7000 to 8000 ft. The chief of these are North and South Parks, drained by the North and South Platte Rivers on the eastern slope, Middle Park drained by the Grand River on the western slope, and the San Luis Valley draining into the Rio Grande River.

The most recent and complete work on Colorado Birds is that of Mr. W. W. Cooke, formerly on the staff of the State Agricultural Experiment Station at Fort Collins, and now on the staff of the Federal Biological Survey at Washington*. In the summary contained in the final supplement published in 1900, the total number of species of birds met with in Colorado is given as 387; since then about 20 additional forms have been recorded, bringing the total up to 407. Of these, 93 are resident throughout the year, 23 are regular winter visitors, 243 are breeding summer residents, while the balance is made up of migrants and stragglers.

The observations which I have to make are on the residents and winter-visitors, and have been made either in the town of Colorado Springs or in the immediate neighbourhood. This town is situated on the extreme western edge of the open plains at an altitude of 6000 ft., while immediately to the west again are the foot-hills of the Rockies, culminating in Pike's Peak (14,147 ft.) about twelve miles distant, so that every condition is to be found for a most varied Avifauna.

In the town itself the only bird which is able to hold its own against the ubiquitous European Sparrow is the House-Finch (*Carpodacus mexicanus frontalis*), very common everywhere throughout the year. The male is a handsome bird with crimson on the head and rump, and has a very sweet song, so that it is a great favourite with bird-lovers. It is found chiefly about the gardens and grass-plots in the residential parts of the town, and frequently nests in or about the verandahs and covered porches with which most of the houses are provided. I have often watched it contending with the Sparrows for scraps, and it seems quite able to take care of itself.

Occasionally during the winter we have a visit from the Western Evening Grosbeak (*Coccothraustes vespertinus montanus*), a large and beautiful species with bright yellow front and wing-bands. This bird is somewhat of a wanderer and has been found in Colorado in almost every month of the year, though only on one occasion has it been detected nesting. Another visitor of somewhat similar habits is the

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* 'Birds of Colorado,' by W. W. Cooke, Bull. no. 37 of the State Agricultural Experiment Station, March 1897.

Waxwing (*Ampelis garrulus*), which I have once or twice observed in the town in winter coming to the Honeysuckle-berries for food.

Out on the open plains to the east of the town the only bird to be found in winter in any numbers is the Desert Horned Lark (*Otocorys alpestris leucolæma*). This particular subspecies is a resident bird throughout the year in the drier parts of the western plains, and is also found in the mountains wherever there are suitable tracts of open country such as occur in the "parks." During the winter the Horned Larks congregate in small bunches, and are often to be met with along the roads, where they appear to pick up a scanty living from the horse-droppings, and at night find a warmer shelter in the ruts and on the bare earth than they can get on the grass. Occasionally a very severe spell of cold and snow drives them into the towns and villages, where they congregate in thousands, and many doubtless are saved from starvation by the kind-hearted townspeople who feed them.

The greatest variety and number of winter-birds are to be met with along the valleys; here there is always a fair amount of shelter in the form of Cottonwood trees (*Populus*), Alders (*Alnus*), and Willows along the streams, with Scrub-oak and Mountain-mahogany (*Cercocarpus*) on the steep sides of the valley.

The most conspicuous bird in such localities is the American Magpie (*Pica pica hudsonia*). Very closely allied to the English bird, it only differs in its slightly larger size. It is entirely confined to the western half of the North-American Continent. This Magpie has the same cunning and suspicious nature as the English bird; it is quite tame and approachable when one is without a gun, but will not let itself be caught within range of fire. It is a great egg-lover, and takes every opportunity of robbing hen-houses, sometimes sucking the eggs on the spot, sometimes carrying them off to a distance. Its flight is slow and laboured, its long tail seeming to impede it, especially in a high wind. It is generally found in small parties of two or three during the winter, and is a resident all the year round.

Other members of the same family constantly seen about our valley are the large and handsome Crested Jay (*Cyanocitta stelleri diademata*) and the Woodhouse Jay (*Aphelocoma woodhousei*), both noticeable for their bright plumage and harsh cries. The Columbian Nutcracker (*Nucifraga columbiana*) and the White-headed Jay (*Perisoreus canadensis capitalis*) seldom, if ever, descend from the higher elevations so low as 6000 ft.

Of the smaller birds, by far the most numerous along the valley and wherever there is shelter are the Juncos, sometimes called Snow-birds. We have no less than six species of this genus, all tolerably common. Only one (*Junco caniceps*) breeds in Colorado (at high elevations), the others (*J. aikeni*, *J. shufeldti*, *J. mearnsi*, *J. hyemalis*, and *J. montanus*) are only winter-birds. They are always in large flocks, several species generally keeping together, the commonest being perhaps the Pink-sided (*J. mearnsi*) and the Black-headed (*J. shufeldti*). Every morning when I look out I see large numbers of them on the ground pecking round in the straw and manure with which the lawns and garden are covered up in winter.

Almost equally common are the two Chickadees or Tits (*Parus gambeli* and *P. atricapillus septentrionalis*), which climb about among the Cotton-trees, and apparently secure some insect-nourishment among the twigs and winter buds. They are both resident throughout the year. Another common winter-visitor is the handsome Western Tree-Sparrow (*Spizella monticola ochracea*), which can almost always be recognised by the black patch in the middle of its grey chest. It is often in company with the Juncos, but is less terrestrial in its habits.

The Western Meadow-Lark is generally placed among the summer residents of Colorado, and no doubt the great majority of the birds do go south, but a few certainly winter with us, and during the last months (November to March) I have frequently seen a small flock in our valley. On bright sunny days they will sit on the top of bushes and sing nearly as sweetly as in spring. I know of no more exhilarating and delicious sound than the note of the Western Meadow-Lark. There is something particularly buoyant and joyful in it. It is impossible to reproduce it in notes or words, as it varies immensely with different individuals.

A rare resident bird which here reaches perhaps its most northern limits is the Road-Runner or Chaparral-Cock (*Geococcyx californianus*). This is a ground-living Cuckoo, though with its long tail and running habits it looks much more like a small Pheasant than a Cuckoo. Its wings are weak and short, and it seldom flies, but skulks in the low scrub of the foot-hills in sheltered nooks. It is particularly fond of a certain limestone-ridge which forms one of the outermost escarpments of the mountains close to my house.

We have three resident Woodpeckers, all fairly common: the Rocky Mountain (*Dryobates villosus monticola*), the Batchelder (*D. pubescens homorus*), and the Red-winged Flicker (*Colaptes cafer*). The last, a specially characteristic American form, is easily recognised by its undulating flight and by its characteristic sharp, clear, but somewhat cackling note. In Eastern Colorado and Western Kansas most interesting intermediate forms between the very distinct Yellow Flicker of the east and the Red-shafted Flicker of the west are not infrequently met with. In some cases the bird has the yellow lining of the tail and wing of *C. auratus* with the red moustache-spots of *C. cafer*, and in others the lining colour of the tail is partially red and partially yellow. Hybridization between the two species seems the only reasonable explanation of this curious state of things.

The subject of vertical migration is one of very considerable interest, and one which has not hitherto received so much attention as it deserves. Little advance has been made in the study of it since the paper by Drew ('Auk,' ii. pp. 11-18, 1885) published many years ago.

Comparatively few species breed at great elevations and winter on the plains, chiefly because the climate of the plains is frequently more severe than that of the mountains and there is certainly less shelter. But there are a good number of birds which make slight vertical migrations, such as the Long-crested Jay, which is found along the foot-hills in winter, and nests in the higher elevations, from 7000 to 11,000 ft., while the Grey-headed Junco (*Junco caniceps*) makes the same movements.

Among the birds which keep to high elevations throughout the year are the Ptarmigan (*Lagopus leucurus*), the Pipit (*Anthus pennsylvanicus*), and the Leucostictes, of which we have four species—one (*Leucosticte australis*) resident and breeding, though the eggs have never yet been taken, the others (*L. tephrocotis, L. littoralis,* and *L. atrata*) only in Colorado during the winter months. At this season all the species associate together in flocks at or about timber-line (13,500 ft.). How they manage to pick up a living is a mystery, but on Pike's Peak they are very numerous round the house of the engineer in charge of the Colorado Springs water-supply, which is derived from several lakes on the slopes of the mountain. They feed on the refuse-heap near the house and seem to do fairly well.

Occasionally after a severe storm the Leucostictes are driven down to lower altitudes in enormous numbers. Such was the case on April 20th, 1874, when Mr. Aiken found literally thousands of these birds in an empty lot in the town of Cañon City and secured large numbers for his collection; among them were the types of *L. atrata* subsequently described by Mr. Ridgway.

I append a list of our winter-birds found in El Paso County, of which Colorado Springs is the country seat. They are placed in two categories, as residents all the year round and as winter-visitors. Examples of all of them are in the Aitken collection of birds in the Colorado College Museum. The birds are arranged and named in accordance with the A. O. U. Check-list.

List of Resident Birds in El Paso County, Colorado.

Dafila acuta.
Dendragapus obscurus.
Lagopus leucurus.
Circus hudsonius.
Accipiter velox.
—— cooperi.
—— atricapillus.
Buteo borealis calurus.
—— swainsoni.
Archibuteo ferrugineus.
Aquila chrysaëtos.
Falco mexicanus.
—— peregrinus anatum.
—— sparverius.
Asio wilsonianus.
Nyctale acadica.
Megascops asio aikeni.
—— flammeola.
Bubo virginianus pallescens.
Speotyto cunicularia hypogæa.
Glaucidium gnoma.
Geococcyx californianus.
Ceryle alcyon.
Dryobates villosus monticola.
—— pubescens homorus.
Picoides americanus dorsalis.
Melanerpes torquatus.
Colaptes cafer collaris.
Otocorys alpestris leucolæma.
Pica pica hudsonia.
Cyanocitta stelleri diademata.
Aphelocoma woodhousei.
Perisoreus canadensis capitalis.
Nucifraga columbiana.
Cyanocephalus cyanocephalus.
Agelaius phœniceus fortis.
Sturnella neglecta.
Coccothraustes vespertinus montanus.
Pinicola enucleator montana.
Carpodacus cassini.
—— mexicanus frontalis.
Loxia curvirostra minor.
Leucosticte australis.
Astragalinus tristis.
Spinus pinus.
Passer domesticus.
Junco caniceps.
Pipilo fuscus mesoleucus.
Ampelis cedrorum.
Cinclus mexicanus.
Catherpes mexicanus conspersus.
Certhia familiaris montana.
Sitta carolinensis nelsoni.
—— canadensis.
—— pygmaea.
Lophophanes inornatus griseus.
Parus atricapillus septentrionalis.
Parus gambeli.
Psaltriparus plumbeus.
Myadestes townsendi.

List of Winter-Visitors.

Archibuteo lagopus sancti-johannis.
Acanthis linaria.
Leucosticte tephrocotis.
—— —— littoralis.
—— atrata.
Passerina nivalis.
Calcarius lapponicus.
Spizella monticola ochracea.
Junco aikeni.
—— hyemalis.
—— shufeldti.
Junco mearnsi.
—— montanus (= shufeldti × mearnsi).
—— connectens (= shufeldti × hyemalis).
—— annectens (= mearnsi × caniceps).
Pipilo maculatus arcticus.
Ampelis garrulus.
Lanius borealis.

XVI.—*On the Genera* Henicornis *and* Chilia.

By T. Salvadori, H.M.B.O.U.

The genus *Henicornis*, under the incorrect form *Enicornis*, was established by G. R. Gray as a substitute for *Eremobius* of Gould (nec *Eremobia* Steph.), the type of which is *Eremobius phœnicurus* Gould. To the same genus have been attributed three other species: *H. melanura* G. R. Gr. and the more recently described *H. striata* Allen and *H. wallisi* Scott, but I am not acquainted with the two latter.

Of *H. melanura* the Museum of Turin possesses four specimens, and I must say that they appear to me generically different from *H. phœnicura*, the bill being much longer and straight, while in *H. phœnicura* it is shorter with the culmen slightly curved. The genus *Henicornis* comes very near to *Cinclodes*, having the bill almost the same; but the tarsus and the wings are shorter.

I propose to separate *H. melanura* generically with the following characters:—

Chilia, gen. nov. Differt a genere *Henicornis* dicto rostro longiore et recto, minime incurvato, gonyde ascendente, fere sittino.

Henicornis.

	Type.
Eremobius Gould, Zool. Voy. Beagle, iii. p. 69 (1839) (nec *Eremobia* Steph., 1829).	*E. phœnicurus.*
Enicornis G. R. Gray, List Gen. B. p. 17 (1840)	*E. phœnicura.*
Henicornis Agass. Nomencl. Zool., Index, p. 178 (1846).	
Ericornis Cass. in Gillis, Un. St. Astron. Exp. ii. p. 188 (1855).	

Henicornis phœnicura.

Eremobius phœnicurus Gould, Zool. Voy. Beagle, Birds, p. 69, pl. 21 (1839) * (Port Desire, St. Julian, Santa Cruz,

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* The date 1841 generally attributed to the 'Birds of the Voyage of the Beagle' is not exact, as G. R. Gray in the 'List of the Genera of Birds' published in 1840, but dated October 1839, mentions the *Eremobius phœnicurus* of Gould, and quotes the 'Voyage of the Beagle.'

Patagonia, and also on the eastern side of the Cordilleras between Santiago and Mendoza *).

Enicornis phœnicura G. R. Gr. List Gen. B. p. 17 (1840); id. op. cit. 2nd ed. p. 22 (1841); id. Gen. B. i. p. 133 (1846); id. Hand-list, i. p. 166. n. 2204 (1869) (Chili!).

Henicornis phœnicura Bp. Consp. i. p. 214 (1850) (Patagonia); Rchnb. Icon. Av. t. 545. f. 3718 (1853) (ex Gould); id. Syn. Av., Scansoriæ, p. 206. n. 501 (1853); Scl. & Salv. Nomencl. p. 62 (1873) (Patagonia); Scl. Cat. B. xv. p. 26 (1890) (Patagonia): Oust. Miss. Sc. Cap Horn, Oiseaux, pp. 270, 326. n. 57 (1891) (Patagonia, Chili!); Sharpe, Hand-list, iii. p. 50. n. 1 (1901) (Patagonia).

Ericornis phœnicura Cass. in Gillis, Un. St. Astron. Exped. ii. p. 188 (1855) (critical).

Henicornis gouldi, part., Cab. & Hein. Mus. Hein. ii. p. 24 (1859).

Furnarius phœnicurus, part., Gieb. Thes. Orn. ii. p. 217 (1875).

Henicornis phœnicurus Scl. & Huds. Arg. Orn. i. p. 173 (1888) (Chili! and Patagonia).

This species was discovered by Darwin during the voyage of the 'Beagle'; it was found in three different places: Port Desire, St. Aignan, and Santa Cruz on the western coast of Southern Patagonia.

The Museum of Turin possesses a specimen presented by Dr. G. Burmeister, which was obtained at Sta. Cruz on February 10th, 1889.

This specimen appeared to me so very different from *Henicornis melanura* (of which our Museum has four specimens from Chili) that I had failed to recognise it even generically. I therefore asked Mr. Hellmayr to examine it, and he has identified it.

It has already been remarked that Cabanis and Heine were quite mistaken in referring *H. phœnicura* and *H. melanura* to one and the same species. Cassin was the first to clearly point out the differences between the two birds.

I suppose that the habitat Chili, attributed to this species by G. R. Gray in his 'Hand-list,' by Sclater and Hudson in their 'Argentine Ornithology,' and also by Oustalet (*l. c.*), rests on the erroneous statement in the 'Voyage of the Beagle' that *H. phœnicura* was found also on the eastern side of the Cordilleras, between Santiago and Mendoza.

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* Probably this locality is not correct, and refers to some other species.

HENICORNIS STRIATA.

Enicornis striata Allen, Bull. Am. Mus. N. H. ii. p. 89 (1889) (Valparaiso, Chile); Sclat. Cat. B. xv. p. 26, note (1890).

Henicornis striata Sharpe, Hand-list, iii. p. 50. n. 2 (1901) (Chili).

"Differs from *E. phœnicurus* in its generally much lighter colors, in the small amount of black in the tail, and in the *broad white streaking of the whole lower plumage.* The single specimen has the appearance of being fully adult. Length 173 mm., wing 85 mm., tail 74 mm., bill (exposed culmen) 24·5 mm., tarsus 21 mm." (*Allen.*)

I am not acquainted with this bird.

HENICORNIS WALLISI Scott.

Henicornis phœnicura Durnf. (nec Gould), Ibis, 1878, p. 395 (Chupat, C. Patagonia); Scl. Cat. B. xv. p. 26, specim. *d* (1890) (Chupat, Patagonia).

Henicornis phœnicurus, part., Scl. & Huds. Arg. Orn. i. p. 173 (1888) (Central Patagonia).

Henicornis wallisi Scott, Bull. B. O. C. x. p. lxiii (1900) (Arroyo Eke, Patagonia); Ibis, 1900, p. 539; Sharpe, Hand-list, iii. p. 51. n. 3 (1901) (Patagonia).

It appears that this form has been separated on very slight grounds, as Mr. Hellmayr, who has examined three adult birds in the Tring Museum, writes to me that they do not bear out all the characters put forward by Mr. Scott. They are neither larger, nor have the bill longer than in *H. phœnicura,* from which they merely differ in having the two middle rectrices wholly brown or with but a small ferruginous patch at the base of the inner web, while in the types of *H. phœnicura* in the British Museum the whole basal portion of both webs is ferruginous.

CHILIA MELANURA.

Enicornis melanura G. R. Gr. Gen. B. i. p. 133, pl. xli. (1846); id. Hand-list, i. p. 166. n. 2205 (1869) (Chili).

Upucerthia phœnicura Des Murs (nec *Enicornis phœnicura* Gould), in Gay, Faun. Chil., Aves, p. 280 (1847); Philippi, Anal. Univ. Chile, xxxi. p. 250 (Central Chili).

Henicornis melanura Bp. Consp. Av. i. p. 214. n. 2 (1850) (Patagonia!); Rchnb. Icon. Av. t. 545. f. 3719 (1853); id. Syn. Av., Scansoriæ, p. 206. n. 502 (1853) (Patagonia!); Scl. & Salv. Nomencl. p. 62 (1873) (Patagonia!); Scl. Cat. B. xv. p. 27 (1890) (Chili): James, New List of Chil. B. p. 4 (1892) (resident); Sharpe, Hand-list, iii. p. 51. n. 4 (1901) (Chili).

Ericornis melanura Cass. in Gillis, Un. St. Astron. Exped. ii. p. 188, pl. xxi. f. 1 (♂) (1855) (Chili).

Henicornis gouldi, part., Cab. & Hein. Mus. Hein. ii. p. 24 (1859); v. Pelz. Reise Novara, Vögel, p. 59 (1865) (Chile).

Henicornis phœnicura Scl. (nec Gould), Cat. Amer. B. p. 147. n. 892 (1862) (Chili); Reed, Cat. Av. Chil. p. 9 (Anal. de la Univ. xciii. 1896)*.

Furnarius phœnicurus, part., Gieb. Thes. Orn. ii. p. 217 (1875).

Tapaculo de la Cordillera of the Chilians.

This species appears to be confined to Chili; the "habitat" Patagonia given by Bonaparte, Reichenbach, and also by Sclater and Salvin in the 'Nomenclator' is certainly erroneous.

As stated before, the Museum of Turin possesses four specimens of this species: two of them were received from the Museum of Santiago with the wrong name of "*Enicornis phœnicura*," written, I believe, by Dr. Philippi; they are male and female and nearly alike, but the female differs from the male in having the lores and also an almost obsolete superciliary stripe, beginning on the sides of the forehead, whitish.

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* *Cf.* 'Ibis,' 1897, p. 129.

XVII.—*On the Nidification of* Halcyon pileatus *and* Turnix blanfordi *in Hong Kong.* By Staff-Surgeon K. H. Jones, R.N.

Both of these species are among the many concerning the breeding-habits of which little or nothing appears to be on record.

Halcyon pileatus is exceedingly common in the island of Hong Kong, and the observations which follow concerning its nidification have reference to that locality. This bird spends the winter months on the sea-coast and on the small estuarine mud-flats and mangrove-swamps which abound in certain parts of the Kwang Tung littoral. In the third week of April, however, birds, already paired, suddenly make their appearance in the neighbourhood of the places in which they intend to nest. These places have been far from the sea-coast, and sometimes at a considerable distance from it, in all cases which have come under my observation.

The site of the nest in Hong Kong is almost always some perpendicular face of disintegrated granite, such as is found in many of the water-worn nullahs plentifully scattered over the lower ranges of the hills, or a locality where a small landslip has taken place and left bare a perpendicular cliff, perhaps many feet high. But occasionally an artificial cutting through the disintegrated granite along the course of a road is made use of, in the less frequented parts of the Colony. The site is often one which has been in use for many years, to judge by the number of holes to be seen, and in certain cases the same burrow is occupied for two or more succeeding seasons.

The nesting-hole is rarely more than two feet in length, never more than three, and at the inner end an excavation of some fifteen inches in diameter is made to receive the eggs. The birds not infrequently make several attempts before they are able to bore a hole of the requisite depth, the hardness in the disintegrated granite or embedded pieces of rock preventing further progress, after a few inches or a foot has been drilled out. It follows, therefore, that perhaps not more than one hole in five penetrates the complete distance in a Kingfisher's bank, while a dozen openings may be seen on its face. A distance of ten inches has been measured, which was excavated, between 11 A.M. and 7 P.M., by a pair of *H. pileatus.*

The eggs, as in all other species of the genus, are laid on the bare earth of the burrow, with which in Hong Kong they are invariably stained, and round them an ever-increasing amount of castings is piled up. In the case of *H. pileatus* this consists largely of the elytra and other chitinous parts of sundry Coleoptera, but also, in general, of fragments of the shells and other cretaceous parts of crabs and various marine crustacea. The crabs are often carried more than a mile from the sea to the nest.

It is of interest to note that although the shells of crabs are often found in the nesting-holes of *H. smyrnensis,* which is also a common breeding-bird in Hong Kong, the bones of small reptiles almost invariably occur among the castings of that species, but are never found amongst those of *H. pileatus.*

The eggs, it need scarcely be said, are white and glossy, like those of all members of the family. The earliest date on which eggs have been taken was May 25th, when the clutch was fairly hard-set, so that they must have been laid a week at least. The latest date on which fresh eggs have been obtained was June 9th, so that from about the middle of May to the middle of June is the laying-season at Hong Kong.

The eggs are four or five in number, usually five, and are rounded like those of all Kingfishers; they are often less so than those of *Halcyon smyrnensis* and are also, as a rule, a little larger.

After the eggs are laid the male flying backwards and forwards with food is very noisy, uttering continuously his ringing laughing cry, but when once the eggs have been hatched the birds are extremely silent on their journeys to and fro.

The period of incubation is probably about three weeks, and unless the birds are disturbed only one brood is raised in the year.

TURNIX BLANFORDI.

In 'The Ibis' for January, 1907 (p. 17), Mr. J. D. D. La Touche described eggs which he believed to be those of this bird, taken at Chin Kiang, but he did not succeed in authenticating them.

Turnix blanfordi is a common summer-visitor to the Shantung Promontory, and the natives of that part of China are very well acquainted both with the bird and its nests and eggs. The Chinese call it Hwang Woā (the Yellow Quail). The birds arrive in April and May and depart for the south at the end of October.

The nest is almost always placed in a cornfield, and is a slight affair of straw and grass, resembling that of a Land-Rail on a small scale.

The eggs are invariably four, rather rounded in shape and with a somewhat smooth and glossy surface. The colour is dirty white, very thickly marked with small spots of various shades of green, which are peppered over the whole surface. A few spots of a bluish-black colour, also small, occur on all specimens, and may perhaps tend to form an imperfect zone in certain cases.

I have examined thirty-three eggs of this bird, all of which were obtained in the Shantung Promontory by a European resident. The earliest date on which they were found was May 15th, and the latest July 7th, but the great majority of clutches were laid in June. Always shy, the bird is more than usually so in the breeding-season, and it was not without some difficulty that a specimen was shot from the nest, thereby putting the identity of the eggs beyond dispute.

XVIII.—*On the Birds of Inkerman Station, North Queensland.*

By Collingwood Ingram, F.Z.S., M.B.O.U.

(Plate IX.)

Early in 1907 my father arranged that Mr. Stalker should transfer his labours from Alexandra, in Northern Territory, South Australia—where he had been making exhaustive collections of birds and mammals—to Inkerman, another cattle-station belonging to the same owners in North Queensland. Before describing the excellent series of birds procured at the latter place, I had hoped to be able to supplement my first paper ('Ibis,' 1907, p. 387) by the description of a further consignment of skins from Alexandra; but although the case containing them was dispatched more than eighteen months ago, owing to floods and other hindrances it has not yet reached its destination.

The Inkerman collection is very extensive, and no fewer than ninety-three species are represented in it, of which two (*Neositta magnirostris* and *Sphecotheres stalkeri*) are new to science.

Unfortunately Mr. Stalker has not supplied us with even a rough description of the locality in which he worked; but as I spent a fortnight at this station when in Australia some years ago, I am to a certain extent able to remedy this omission from my own journal. However, as I was there towards the end of an exceptionally long and severe drought, I probably saw the country under somewhat different conditions, while the phenomenal aridity no doubt explained the extreme paucity of bird-life noticed at the time of my visit. Whether Mr. Stalker purposely refrained from collecting the larger birds I do not know, but when I was at Inkerman in July and early August 1902, it was certainly the large forms that were then most commonly encountered—indeed, the locality seemed to be almost entirely deserted by the smaller passerine species. It may perhaps be of interest to enumerate here the few birds observed by me and not procured by Mr. Stalker.

On several occasions Emus (*Dromæus novæ-hollandiæ*) were seen feeding at a distance of two or three hundred yards, while the body of one was found partly imbedded in the mud of a lagoon; this bird had evidently perished in attempting to reach the water, being unable to extricate itself from the soft mud. Cranes or "Native Companions" (*Antigone australasiana*) were frequently encountered, while Jabirus (*Xenorhynchus asiaticus*) and Pelicans (*Pelecanus conspicillatus*) were also fairly common. These birds appeared to be very fearless when we were driving in a buggy, and the first two would merely flap or stride out of the way, rarely taking wing unless disturbed by a man on foot. The Australian Bustard (*Eupodotes australis*) was less plentiful, and only one example was procured during my stay. Of the Anatidæ I may mention the Black Duck (*Anas superciliosa*), the Teal (*Nettium castaneum*), the White-eyed Duck (*Nyroca australis*), the Maned Goose (*Chenonetta jubata*), the Pied Goose (*Anseranas semipalmata*), and a single example of the Plumed Whistling Duck (*Dendrocycna eytoni*), the first three species being by far the commonest.

The Pied Goose was a bird especially interesting to me, on account of its habit of settling upon the uppermost branches of trees. There was a certain lagoon almost always frequented by a dozen or more of these Geese, and they were usually to be found resting on a couple of dead trees that had fallen across the water. When suspicious, they would straighten their necks and utter a cackling or trumpeting noise, which they kept up until all danger had passed; on the other hand, if thoroughly disturbed, they would rise with heavy flight and, after circling once or twice round the lagoon, finally settle, perhaps somewhat awkwardly, on the topmost twigs of a gum-tree, the branches swaying to and fro under their weight. Of course, it must be remembered that the feet of these Geese are only partially palmated, which enables them to perch with a certain amount of ease.

It is a little surprising that Mr. Stalker has not sent home any specimens of Corvidæ, as a black Crow (either *Corvus coronoides* or *Corone australis*) was very numerous round the station-buildings when I was there. Finding them wild and somewhat difficult to approach, I unfortunately did not trouble to shoot one for identification. The Squatter Pigeon (*Geophaps scripta*) was also fairly common, while Cockatoos (*Cacatua galerita*) were not unfrequently encountered.

Approximately situate in lat. 20° S. by long. 147° E., Inkerman Station lies some fifty miles to the south-west of Townsville, and is about ten miles from the banks of the Burdekin—a river, in 1902, reduced to a few pools of brackish water, but which, I am told, at certain seasons carries a fine volume of water.

After a rainless spell of many months' duration—it was several years since there had been a normal rainfall—the country was terribly parched and dry when I visited it, as is shown by the following remarks transcribed from my journal:—"As one looks over the stretch of dead, bleached grass-stems, the atmosphere shimmers in the noonday sun almost as it would upon a desert and, with the exception of the tree-foliage, there is absolutely no verdure to be seen. Generally speaking, the district is flat, but in several quarters a single hill or small range of hills show abruptly above the level, and these appear to be more or less uniformly covered with trees and scrub.

"Most of the level country is also covered with an open forest, but in many places the gum-trees are very thinly scattered over the ground. The two commonest species, and those that give character to the landscape, are the Moreton Bay ash and the blood-wood; the former being by far the most numerous. But here and there are also trees of other kinds—the pandanus, leichhardt, acacia, bottle-tree, and others; although of course the typical *Eucalypti* always predominate. Situated at wide intervals over nearly the whole station are narrow sheets of water—'lagoons,' as they are locally termed. These are often deep and sunk between steep banks, and not a few are thickly overgrown with blue water-lilies or with the more luxuriant lotus-lily."

Mr. Stalker also collected birds on Mount Elliot, near Townsville, and on Mount Abbot, in the Bowen district.

In the order of the species and nomenclature I have implicitly followed Mr. Gregory Mathews in his recently published 'Handlist of the Birds of Australia'*, a work founded to a large extent on Dr. Bowdler Sharpe's more comprehensive 'Hand-list of Birds' now in course of publication, while, for the convenience of my readers, I have also quoted Gould's more familiar names.

It is pleasing to think that my father's recent interest in scientific ornithology should have met with such encouraging results, for the two collections that he has placed at my disposal have added no fewer than seven new species or subspecies to the Australian list! In concluding I would like to mention my indebtedness to Dr. Sharpe and the other officials at the British Museum for the kind and courteous assistance which they have rendered me during the preparation of this paper; while I must not forget my obligations to Mr. Mathews, who has very kindly looked over the proof-sheets before they went to press.

1. MACROPYGIA PHASIANELLA Temm.

Macropygia phasianella Gld. Handb. ii. p. 148; Math. Handl. p. 10.

a. Adult. Inkerman.

2. GEOPELIA HUMERALIS (Temm.).

Erythrauchæna humeralis Gld. Handb. ii. p. 142.

Geopelia humeralis Math. Handl. p. 10.

No. 333. ♀ adult. Inkerman, April 19, 1907. Bill dark grey; feet pinkish; iris pale yellow.

3. PODICIPES NOVÆ-HOLLANDIÆ Steph.

Podicipes gularis Gld. Handb. ii. p. 513.

Podicipes novæ-hollandiæ Ingram, Ibis, 1907, p. 392; Math. Handl. p. 14.

a. ♀ imm. Inkerman, June 9, 1907. Bill brown above, cream below; feet green-black.

4. HYDROCHELIDON HYBRIDA (Pall.).

Hydrochelidon leucopareia Gld. Handb. ii. p. 406.

Hydrochelidon hybrida Math. Handl. p. 20.

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* See 'The Emu,' Supplement to vol. vii., January 1908.

a, b, c. ♂, ♂, ♂ (two adult and one imm.). Inkerman, Oct. 7, 1907. Bill dark red; feet scarlet (dark red in the immature example); iris brown.

5. GELOCHELIDON ANGLICA (Mont.).

Gelochelidon macrotarsa Gld. Handb. ii. p. 403.

Gelochelidon anglica Math. Handl. p. 20.

No. 345. ♂ adult. Beach Mount, Inkerman, April 28, 1907. Bill and feet black; iris brown.

6. STERNA BERGII (Licht.).

Thalasseus cristatus Gld. Handb. ii. p. 394.

Sterna bergii Math. Handl. p. 20.

No. 348. ♂ adult. Beach Mount, Inkerman. Feet black.

7. STERNA SINENSIS (Gmel.).

Sterna sinensis Math. Handl. p. 21.

a. ♂ adult. Beach Mount, Inkerman, May 2, 1907. Bill dark brown; feet blackish brown.

8. LARUS NOVÆ-HOLLANDIÆ Steph.

Bruchigavia jamsonii Gld. Handb. ii. p. 387.

Larus novæ-hollandiæ Math. Handl. p. 22.

a. sex? adult. Beach Mount, Inkerman, April 24, 1907.

No. 340. *b, c.* ♂ ♀ adult. Beach Mount, Inkerman, May 5, 1907. Bill dark red or purplish red; feet scarlet; iris pale grey-yellow.

9. HÆMATOPUS LONGIROSTRIS Vieill.

Hæmatopus longirostris Gld. Handb. ii. p. 215; Math. Handl. p. 23.

a, b. ♂ and ? adult. Beach Mount, Inkerman. Bill scarlet, creamy towards tip; feet pinkish red.

10. LOBIVANELLUS MILES (Bodd.).

Lobivanellus personatus Gld. Handb. ii. p. 220.

Lobivanellus miles Math. Handl. p. 24.

No 375. ♂ adult. Inkerman, Nov. 18, 1907. Bill yellow; feet red; iris yellow.

11. ÆGIALITIS RUFICAPILLA (Temm.).

Ægialophilus ruficapillus Gld. Handb. ii. p. 235.

Ægialitis ruficapilla Math. Handl. p. 25.

No. 344. *a, b.* ♂ ♀ adult. Beach Mount, Inkerman, April 28, 1907.
,, *c, d.* ♀ and ? adult. Beach Mount, Inkerman, May 3, 1907.

Bill black; feet greyish black; iris brown.

12. HYDRALECTOR GALLINACEUS (Temm.).

Parra gallinacea Gld. Handb. ii. p. 330.

Hydralector gallinaceus Math. Handl. p. 29.

No. 354. *a, b.* ♀ and ?. Inkerman, June 1907. Feet dark green; iris brown.

13. BURHINUS GRALLARIUS (Lath.).

Œdicnemus grallarius Gld. Handb. ii. p. 210.

Burhinus grallarius Ingram, Ibis, 1907, p. 394; Math. Handl. p. 29.

No. 326. ♂ adult. Inkerman, March 27, 1907.
,, ♀ adult. Inkerman, May 28, 1907.

Bill black; feet greenish grey; iris yellow-grey.

14. IBIS MOLUCCA Cuvier.

Threskiornis strictipennis Gld. Handb. ii. p. 284.

Ibis molucca Math. Handl. p. 30.

a. ♀ (?) adult. Inkerman, March 12, 1907. Bill black; feet bright grey-blue. Food small crabs.

15. HERODIAS TIMORIENSIS Less.

Herodias alba Gld. Handb. ii. p. 301.

Herodias timoriensis Math. Handl. p. 32.

a. ♂ adult. Inkerman, Nov. 19, 1907. Bill yellow, face &c. green; feet black; iris pale yellow.

16. NOTOPHOYX NOVÆ-HOLLANDIÆ (Lath.).

Ardea novæ-hollandiæ Gld. Handb. ii. p. 299.

Notophoyx novæ-hollandiæ Math. Handl. p. 32.

a. ♂ adult. Inkerman, May 22, 1907. Bill dark blue; feet greenish yellow; iris greyish yellow.

17. NYCTICORAX CALEDONICUS (Gm.).

Nycticorax caledonicus Gld. Handb. ii. p. 311; Math. Handl. p. 33.

a, b. ♀ and ? imm. Inkerman, April 1, 1907. Bill greenish brown and greenish yellow to black; feet pale yellowish green; iris narrow, bright yellow. "Food crabs and insects."

18. BUTORIDES STAGNATILIS (Gld.).

Butorides javanica Gld. Handb. ii. p. 317.

Butorides stagnatilis Math. Handl. p. 33.

No. 347. ♀ imm. Inkerman, May 1, 1907. Feet dark green; iris yellow.

19. NETTOPUS PULCHELLUS Gld.

Nettopus pulchellus Gld. Handb. ii. p. 357; Math. Handl. p. 34.

a. ♂ adult. Inkerman, April 4, 1907.

b, c. ♂ ♀ adult. Inkerman, April 11, 1907. Bill black, tip blue-grey; feet black; iris brown.

20. PHALACROCORAX MELANOLEUCUS Vieill.

Phalacrocorax melanoleucus Gld. Handb. ii. p. 493; Math. Handl. p. 37.

No. 349. Sex ? imm. Inkerman, April 26, 1907. Bill dark brown above, deep yellow below; feet black.

21. ASTUR FASCIATUS Vig. & Horsf.

Astur approximans Gld. Handb. i. p. 41.

Astur fasciatus Ingram, Ibis, 1907, p. 396; Math. Handl. p. 40.

No. 328. *a.* ♂ imm. Inkerman, April 16, 1907.

,, *b.* ♂ adult. Castle Hill, Mount Abbot, Oct. 21, 1907. Bill bluish black, cere yellow; feet yellow; iris bright yellow.

22. HALIAËTUS LEUCOGASTER Gm.

Polioaëtus leucogaster Gld. Handb. i. p. 13.

Haliaëtus leucogaster Math. Handl. p. 41.

No. 374. ♀ adult. Inkerman, Nov. 18, 1907. Bill dark blue; feet dirty white; iris brown.

23. Haliastur girrenera Vieill.

Haliastur leucosternus Gld. Handb. i. p. 17.

Haliastur girrenera Math. Handl. p. 41.

No. 343. ♂ adult. Inkerman, Oct. 15, 1907. Bill yellowish, shading to bluish at base, green at juncture of colours ; top of cere yellow ; feet yellow ; iris brown.

"Nest in blue gum overhanging shady water-hole."

24. Haliastur sphenurus (Vieill.).

Haliastur sphenurus Gld. Handb. i. p. 20 ; Ingram, Ibis, 1907, p. 397 ; Math. Handl. p. 41.

a. ♀ adult. Inkerman Station, May 23, 1907. Bill purple-grey ; feet dirty white ; iris brown.

25. Cerchneis cenchroides (Vig. & Horsf.).

Tinnunculus cenchroides Gld. Handb. i. p. 35.

Cerchneis cenchroides Ingram, Ibis, 1907, p. 399 ; Math. Handl. p. 42.

a. ♂ adult. Beach Mount, Inkerman, April 28, 1907. Bill grey to blue ; feet yellow ; iris brown.

26. Ninox boobook (Lath.).

Spiloglaux boobook Gld. Handb. i. p. 74.

Ninox boobook Math. Handl. p. 43.

a. Adult. Inkerman, 1907.

27. Ninox connivens (Lath.).

Hieroglaux connivens Gld. Handb. i. p. 71.

Ninox connivens Math. Handl. p. 43.

a. ♀ adult. Inkerman, April 22, 1907. Bill shaded yellow, much of upper mandible bluish ; feet orange-yellow ; iris bright yellow.

28. Trichoglossus novæ-hollandiæ (Gmelin).

Trichoglossus multicolor Gld. Handb. ii. p. 93 ; Math. Handl. p. 45.

No. 308. *a, b, c.* ♂, ♀, ♀ adult. Mount Inkerman, March 14 & 18, 1907. Bill red and yellow ; feet bluish ; iris orange.

29. PTISTES ERYTHROPTERUS (Gmelin).

Ptistes erythropterus Gld. Handb. ii. p. 37; Math. Handl. p. 48.

No. 302. *a, b, c, d.* Inkerman, April 18 & 21, 1907. Bill creamy yellow and reddish; feet black; iris brown.

30. PLATYCERCUS PALLIDICEPS Vigors.

Platycercus palliceps Gld. Handb. ii. p. 51; Math. Handl. p. 49.

No. 352. ♂ ♀. Inkerman, June 1907. Bill creamy blue; feet black; iris brown.

31. PODARGUS PHALÆNOIDES Gld.

Podargus phalænoides Gld. Handb. i. p. 90; Math. Handl. p. 52.

No. 320. Sex? Inkerman, Feb. 4, 1907. Bill and feet greeny grey; iris golden yellow. The bird was moulting heavily when shot.

32. EURYSTOMUS PACIFICUS (Lath.).

Eurystomus pacificus Gld. Handb. i. p. 119; Math. Handl. p. 53.

No. 368. *a, b.* ♂ ♀ adult. Mount Abbot, Oct. 1907. Bill orange-scarlet; feet scarlet; iris brown.

33. DACELO LEACHI Vig. & Horsf.

Dacelo leachii Gld. Handb. i. p. 124; Math. Handl. p. 54.

No. 304. *a, b.* ♀ and ?. Inkerman, March 7, 1907. Bill dark brown above, cream below; feet grey; iris greyish white.

34. HALCYON MACLEAYI Jardine & Selby.

Cyanalcyon macleayi Gld. Handb. i. p. 133.

Halcyon macleayi Math. Handl. p. 54.

a, b. ♂ and ?. Inkerman, April 4, 1907. Bill black, cream at base of under mandible; feet black; iris brown.

The bird *a* has a fawn collar round the hind-neck, and is probably an immature example.

35. HALCYON SANCTUS Vig. & Horsf.

Todirhamphus sanctus Gld. Handb. i. p. 128.

Halcyon sanctus Math. Handl. p. 54.

No. 315. ♂ adult. Mount Inkerman. March 18, 1907. Bill bluish black above, cream-colour below; feet dark grey; iris brown.

36. Merops ornatus Lath.

Merops ornatus Gld. Handb. i. p. 117; Ingram, Ibis, 1907, p. 401; Math. Handl. p. 55.

No. 318. *a, b.* ♀ ♀ adult. Inkerman, April 3, 1907.
„ *c.* ♀ adult. Inkerman, Oct. 9, 1907.

Bill and feet black; iris hazel-brown.

37. Cuculus inornatus Vig. & Horsf.

Cacomantis pallidus Gld. Handb. i. p. 615.

Cuculus inornatus Math. Handl. p. 57.

No. 300. ♂ adult. Inkerman, March 5, 1907.

No. 361. ♀ adult. Inkerman, Oct. 9, 1907.

Bill bluish black, ranging into light brown below; feet dark grey; iris brown; ring round the eye bright yellow. This bird had been feeding on hairy caterpillars.

38. Cacomantis flabelliformis (Lath.).

Cacomantis insperatus Gld. Handb. i. p. 619.

Cacomantis variolosus Campbell, Nests & Eggs Austr. B. ii. p. 572; Hall, Key B. of Austr. p. 58.

Cacomantis flabelliformis Math. Handl. p. 57.

No. 373. ♀ (?) adult. Mount Inkerman, Nov. 11, 1907. Bill black above, greyish below; iris purplish white.

39. Centropus phasianus (Lath.).

Centropus phasianus Gld. Handb. i. p. 634; Math. Handl. p. 59.

No. 306. *a.* ♀ adult. Inkerman Spring, March 7, 1907.
„ *b.* ♂ adult. Inkerman, April 15, 1907.

I observed this species at Inkerman on Aug. 7, 1902, and wrote the following remarks in my journal:—“We flushed this long-tailed, brown bird from some tall growth and it flew up into a Moreton Bay ash, from which it refused to be disturbed. Among the thin, vertical foliage of this tree it seemed almost incredible that it could find any concealment, but by remaining perfectly still and cleverly placing itself, the bird succeeded in hiding very well, and no amount of shouting, stones or sticks would persuade it to move."

40. HIRUNDO JAVANICA Sparrm.
Hirundo fretensis Gld. Handb. i. p. 110.
Hirundo javanica Math. Handl. p. 60.
a. Immature.

41. MICRŒCA FLAVIVENTRIS Salvad.
Micrœca flavigaster Gld. Handb. i. p. 261.
Micrœca flaviventris Math. Handl. p. 61.
No. 386. *a, b.* ♀ and ? adult. Mount Inkerman, May 17, 1907.
" *c, d, e.* ♂, ♂, ♀ adult. Inkerman Spring, Sept. 1907.
" *f, g.* ♂ ♀ adult. Mount Elliot, Dec. 1907.
Bill dark brown; feet black; iris brown.

The whole series is unusually pale in colour, the birds having a dull "washed-out" appearance.

42. SMICRORNIS FLAVESCENS Gld.

Smicrornis flavescens Gld. Handb. i. p. 274; Ingram, Ibis, 1907, p. 403; Math. Handl. p. 63.

a. ♀ adult. Mount Abbot, Oct. 1907. Bill light brown; feet black; iris brown. "In high gum, early morning."

43. GERYGONE ALBIGULARIS Gld.

Gerygone albigularis Gld. Handb. i. p. 266; Math. Handl. p. 63.

a, b. Sex ? adult. Mount Inkerman, May 17, 1907. Bill dark brown; feet black; iris reddish brown.

44. PŒCILODRYAS SUPERCILIOSA Gld.

Pœcilodryas superciliosa Gld. Handb. i. p. 289; Math. Handl. p. 64.

No. 388. *a, b, c.* ♂, ♂, and ? adult. Inkerman Spring, Sept. 1907.
" *d, e.* ♂ ♀ adult. Mount Elliot, Townsville, Dec. 1907.
Bill and feet black; iris brown.

45. RHIPIDURA ALBISCAPA Gld.

Rhipidura albiscapa Gld. Handb. i. p. 238; Ingram, Ibis, 1907, p. 404; Math. Handl. p. 65.

a. Sex? adult. Inkerman, April 11, 1907. Bill and feet black; iris brown.

46. RHIPIDURA RUFIFRONS (Lath.).

Rhipidura rufifrons Gld. Handb. i. p. 240; Math. Handl. p. 65.

a, b. ♂ and ? adult. Inkerman, Sept. 1907. Bill blackish; feet brown; iris brown. Found in fairly dense scrub.

47. RHIPIDURA ISURA Gld.

Rhipidura isura Gld. Handb. i. p. 242; Math. Handl. p. 66.

No. 385. ♂ adult. Mount Elliot, Dec. 1907. Bill and feet black; iris brown. "Found in thick scrub; testes very large."

48. RHIPIDURA TRICOLOR Vieill.

Sauloprocta motacilloides Gld. Handb. i. p. 244.

Rhipidura tricolor Ingram, Ibis, 1907, p. 404; Math. Handl. p. 66.

a. Sex ? adult. Inkerman.

49. SISURA INQUIETA Lath.

Seisura inquieta Gld. Handb. i. p. 246.

Sisura inquieta Math. Handl. p. 66.

a. Adult. Inkerman.

50. MYIAGRA RUBECULA (Lath.).

Myiagra plumbea Gld. Handb. i. p. 252.

Myiagra rubecula Math. Handl. p. 66.

No. 321. *a, b.* ♂ ♂ adult. Inkerman, Feb. 4, 1907.
,, *c.* Sex ? Inkerman, April 11, 1907.
,, *d.* ♂ adult. Mount Abbot, Oct. 20, 1907. Bill bluish black; feet black; iris brown.

51. PIEZORHYNCHUS GOULDI Gray.

Piezorhynchus gouldi Math. Handl. p. 67.

Monarcha trivirgata, Gld. Handb. i. p. 263.

a, b. ♂ ♂. Spring Ranges, Inkerman, Sept. 1907. Bill dark blue; feet black; iris brown.

52. Monarcha melanopsis Vieill.

Monarcha carinata Gld. Handb. i. p. 262.

Monarcha melanopsis Math. Handl. p. 67.

a. ♀ adult. Near Mt. Abbot, Oct. 20, 1907. Bill bluish; feet dark blue; iris brown.

53. Coracina robusta (Lath.).

Graucalus melanops Gld. Handb. i. p. 192; Ingram, Ibis, 1907, p. 405.

Coracina robusta Math. Handl. p. 68.

No. 346. *a*, *b*. ♂ and ? adult. Inkerman, April 28 and Oct. 17, 1907. Bill and feet black; iris brown.

54. Coracina mentalis (Vig. & Horsf.).

Graucalus mentalis Gld. Handb. i. p. 195.

Coracina mentalis Math. Handl. p. 68.

No. 354. Sex ? adult. Inkerman, June 1907.

No. 355. ♂ adult. Inkerman, June 1907.

No. 379. ♀ ♀ adult. Mount Elliot, Dec. 1, 1907.

Bill and feet black; iris brown.

55. Lalage tricolor (Swains.).

Campephaga humeralis Gld. Handb. i. p. 204.

Lalage tricolor Ingram, Ibis, 1907, p. 405; Math. Handl. p. 68.

No. 372. *a.* ♂ adult. Mount Inkerman, Nov. 11, 1907.

" *b.* ♀ adult. Mount Abbot, Oct. 1907.

Bill black (blackish above and yellowish underneath in female); feet black; iris brown.

56. Lalage leucomelæna Vig. & Horsf.

Campephaga leucomela Gld. Handb. i. p. 203.

Lalage leucomelæna Math. Handl. p. 68.

No. 381. ♂ adult. Mount Elliot (500 ft.), Dec. 1907. Bill and feet black; iris brown.

57. Malurus melanocephalus Vig. & Horsf.

Malurus melanocephalus Gld. Handb. i. p. 333; Math. Handl. p. 79.

No. 365. *a, b.* Sexes ? Inkerman, April 11, 1907.
„ *c, d, e.* ♂, ♀, ♂ adult. Inkerman, Oct. 3, 11, and 19, 1907.

Bill, black in adult male, dark brown in immature male and brown in female ; feet light brown ; iris brown.

The specimen *c* is in full male plumage; in *e* the black and orange feathers are just being acquired.

58. ARTAMUS LEUCOGASTER Valenc.
Artamus parvirostris Ingram, Ibis, 1907, p. 410.
Artamus leucogaster Math. Handl. p. 80.
No. 327. ♂ adult. Inkerman, April 16, 1907.
No. 387. ♀ adult. Mount Elliot, Dec. 1907.

Bill blue to black ; iris brown.

Mr. Stalker remarks that there was a "large egg in the ovary" of the Mt. Elliot bird.

59. ARTAMUS HYPOLEUCUS Sharpe.
Artamus albiventris Gld. Handb. i. p. 149.
Artamus hypoleucus Math. Handl. p. 81.
No. 362. *a, b, c.* ♂, ♀, ♂ (2 adult, 1 imm.). Inkerman, March 15, 1907.
„ *d.* ♂ adult. Inkerman, April 16, 1907.

These birds are much greyer throughout than the two examples from the Interior and S. Australia in the British Museum, which, however, have every appearance of being soil-stained or dirty. Without a larger series for comparison it is impossible to say whether the difference is geographical or not, but the skins, collected from widely separated districts, are certainly distinguishable from one another.

60. ARTAMUS TENEBROSUS (Lath.).
Artamus sordidus Gld. Handb. i. p. 143.
Artamus tenebrosus Math. Handl. p. 81.
a. Adult. Inkerman.

61. ARTAMUS MINOR Vieill.

Artamus minor Gld. Handb. i. p. 146 ; Ingram, Ibis, 1907, p. 408 ; Math. Handl. p. 81.

a. ♂ adult. Inkerman, Iron-bark Ranges, Sept. 1907.
b. ♀ adult. Inkerman, Spring Ranges, Sept. 1907.
Bill indigo-coloured, black tip; feet black; iris brown.

62. COLLYRIOCICHLA HARMONICA (Lath.).
Colluricincla harmonica Gld. Handb. i. p. 220.
Collyriocichla harmonica Math. Handl. p. 81.

No. 369. ♂ adult. Near Mount Abbot, Oct. 21, 1907. Bill black; feet blue-grey; iris brown.

63. PINAROLESTES BOWERI Ramsay.
Pinarolestes boweri Math. Handl. p. 82.

No. 371. *a, b.* ♂ ♀ adult. Inkerman, April 18 and Nov. 11, 1907.
„ *c.* ♂ adult. Mount Elliot, Dec. 1, 1907.

Bill light brown and purplish brown; feet pinky brown; iris brown. This bird was found among mangroves and in dense scrub, and had many musical notes.

64. GYMNORHINA TIBICEN (Lath.).
Gymnorhina tibicen Gld. Handb. i. p. 175; Math. Handl. p. 83.

No. 300. *a, b.* ♂ ♀ (?) imm. Inkerman, March 5, 1907. Bill blue-grey to black; feet black; iris brown.

"Feeding on grasshoppers."

65. CRACTICUS PICATUS Gld.
Cracticus picatus Gld. Handb. i. p. 181; Ingram, Ibis, 1907, p. 410; Math. Handl. p. 84.

No. 305. *a.* ♂ imm. Inkerman Spring, March 7, 1907.
„ *b, c.* ♂ ♀ adult. Inkerman, March 14, 1907.

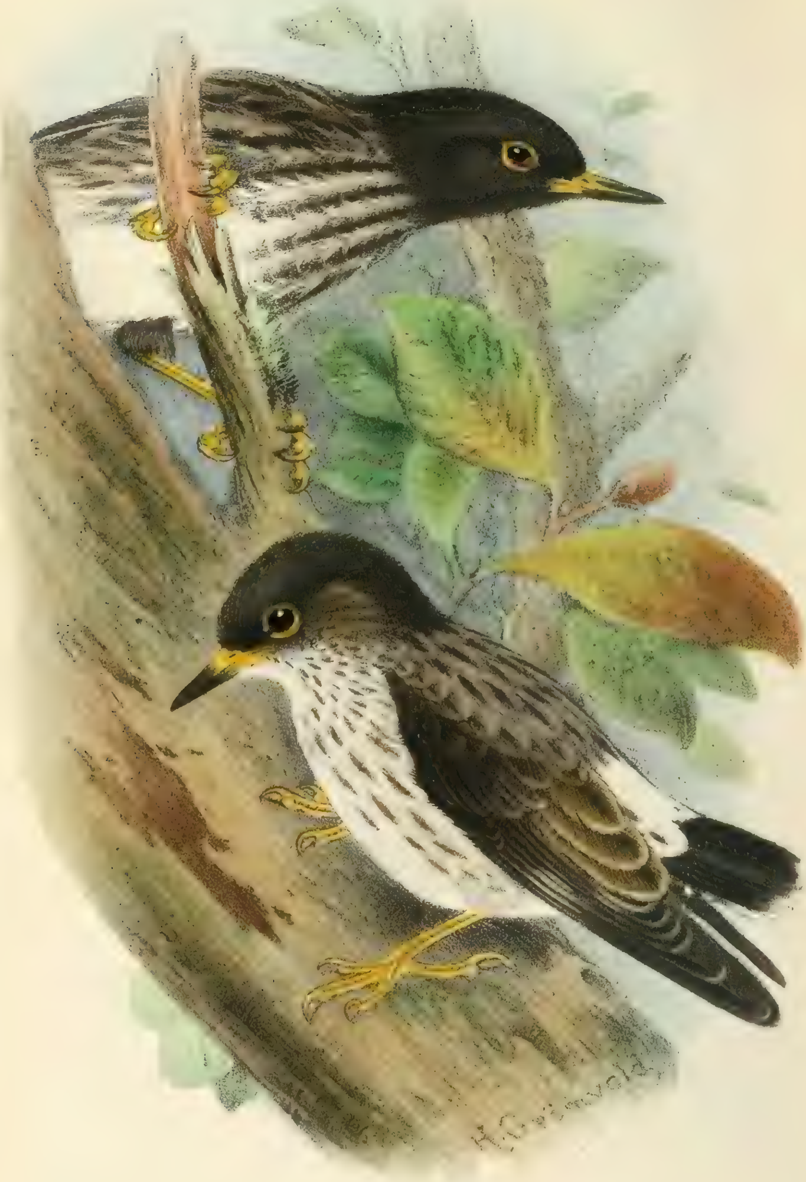
Bill grey-blue to black; feet black (greyish in immature example); iris brown.

66. PACHYCEPHALA MELANURA Gld.
Pachycephala melanura Gld. Handb. i. p. 211; Math. Handl. p. 84.

No. 334. ♂. Inkerman, March 18, 1907. Bill light brown; feet dark brown; iris brown.

This specimen, not having acquired its adult plumage, is somewhat difficult to determine, but it seems highly probable

Ibis. 1908. Pl. IX.



West, Newman imp.

NEOSITTA MAGNIROSTRIS, ♀, ♂.

that it belongs to the above-named species. The head, back, and tail are dark olive-grey; the under parts are dirty buffish white with bright chestnut-red feathers shewing on the belly and under tail-coverts. The auriculars, wing-coverts, and secondaries are also reddish chestnut, the whole giving the bird a very mottled appearance, as though changing into another phase of plumage. There are also one or two chestnut feathers on the crown and nape.

67. PACHYCEPHALA RUFIVENTRIS (Lath.).

Pachycephala rufiventris Gld. Handb. i. p. 212; Math. Handl. p. 85.

No. 301. *a.* Sex? Inkerman, Feb. 4, 1907.
„ *b.* ♂ imm. Inkerman, March 5, 1907.
„ *c.* ♂ (?). „ March 7, 1907.
„ *d, e.* ♂ ♂ imm. and adult. Inkerman, March 14, 1907.
„ *f.* ♂ adult. Inkerman, April 19, 1907.
„ *g, h.* ♀ ♀ adult. Inkerman, Sept. and Oct. 1907.
„ *i.* ♂ adult. Mt. Inkerman, Nov. 11, 1907.
„ *j.* ♀ adult. Mt. Elliot, Townsville, Dec. 1907.

The adult males *e, f,* and *i* have the bill and feet black, iris brown; the others, in female plumage, have the bill dark brown and creamy or yellow-brown towards the base of the under mandible.

68. EOPSALTRIA CHRYSORRHOA Gld.

Eopsaltria chrysorrhoa Math. Handl. p. 86.

a. ♂ (?) adult. Mount Elliot (between 1500 and 2000 feet), Dec. 1907. Bill black; feet dark brown; iris hazel. Found in Casuarina-scrub.

69. NEOSITTA MAGNIROSTRIS. (Plate IX.)

Neositta magnirostris Ingram, Bull. B. O. C. vol. xxi. p. 99.

a, b, c, d. ♂, ♂, ♀, and ? adult. Inkerman, March 14, 1907.

e. ♂ adult. Spring Ranges, Inkerman, Sept. 1907.

Bill creamy brown and dark purplish brown; feet pale bright yellow; iris cream.

This interesting species of Tree-runner is most nearly allied to *N. striata,* but differs from that bird in its generally larger size, and especially in its longer and more massive bill, the average length of the culmen being 0·63 in. as compared with 0·53 in. The bill is also considerably darker, being brownish black for at least three-fourths of its length, and is only cream-coloured at the extreme base, as is that of *N. pileata.* In *N. striata* the blackish marks are confined to the anterior third or half of the bill, chiefly on the upper and lower edges, the remaining area being lemon-yellow. The back is noticeably greyer than in the last-mentioned bird, while the under parts are not so distinctly or so heavily striated, especially towards the centre of the breast and abdomen, which are also of a purer white. The black head of the female and crown of the male lack the brownish tinge noticed in *N. striata.* Average measurements of the two types: wing 3·3 in., tail 1·5 in., tarsus 0·7 in., culmen 0·65 in. The habitat of this species is apparently south of that of *N. striata,* for I find no record of the latter bird being found below Cairns.

70. DICÆUM HIRUNDINACEUM Shaw.

Dicæum hirundinaceum Gld. Handb. i. p. 581; Ingram, Ibis, 1907, p. 412; Math. Handl. p. 90.

No. 342. *a.* Sex? Beech Mount, Inkerman, April 25, 1907.
„ *b.* ♂ adult. Mount Abbot, Nov. 1907.

Bill and feet black; iris brown.

71. PARDALOTUS MELANOCEPHALUS Gld.

Pardalotus melanocephalus Gld. Handb. i. p. 165; Math. Handl. p. 91.

a. ♂ adult. Inkerman, Spring Range, Sept. 1907.
b. ♀. Inkerman, Oct. 19, 1907.

Bill black; feet grey-brown; iris grey.

72. MELITHREPTUS ALBIGULARIS Gld.

Melithreptus albigularis Gld. Handb. i. p. 571; Math. Handl. p. 92.

No. 311. *a, b, c.* ♀ and ??. Inkerman, April 17, 1907.
„ *d, e, f, g.* ♂, ♂, ♂, ♂ (?) adult and imm. Inkerman, Oct. 14, 1907.
„ *h.* ♀ adult. Mount Abbot, Oct. 1907.
„ *i.* ♂ adult. Inkerman, Dec. 14, 1907.

Bill blackish; feet greyish brown; iris hazel. "Space near eye light blue."

The different size of the sexes is very marked, the wing of the male being about two-tenths of an inch longer than that of the female. The immature birds are brownish on the crown and mantle.

73. MELITHREPTUS LÆTIOR Gld.

Melithreptus lætior Ingram, Ibis, 1907, p. 413; Math. Handl. p. 92.

No. 312. *a.* ♀ adult. Inkerman, March 14, 1907.

b. ♂ adult. Spring Range, Inkerman, Sept. 1907. Bill black; feet light brown; iris brown.

74. MYZOMELA SANGUINOLENTA (Lath.).

Myzomela sanguinolenta Gld. Handb. i. p. 555; Math. Handl. p. 93.

No. 324. *a, b, c, d.* ♂, ♂, and ?? (imm. and adult). Beach Mount, Inkerman, May 2, 1907.

No. 384. *e, f.* ♂ ♀. Mount Elliot, Dec. 5, 1907.

Bill brownish black, yellow at the base of the under mandible; feet dark blue, yellow on the sole; iris brown. Frequenting mangroves and ti-trees.

75. MYZOMELA OBSCURA Gld.

Myzomela obscura Gld. Handb. i. p. 559; Math. Handl. p. 93.

No. 301. ♂ adult. Heath Island, Inkerman, April 19, 1907.

No. 331. ♂ adult. Beach Mount, Inkerman, April 25, 1907.

Bill black, yellow of gape shewing; feet dark bluish grey; iris brown.

76. Glycyphila fasciata Gld.

Glyciphila fasciata Gld. Handb. i. p. 499; Math. Handl. p. 94.

No. 322. ♂ adult. Inkerman, April 2, 1907. Bill dark brown; feet brown; iris hazel.

77. Glycyphila modesta Gray.

Glycyphila modesta Math. Handl. p. 94.

No. 360. *a, b.* ♂ ♂ adult. Inkerman, Oct. 9, 1907. Bill reddish brown; iris brown.

78. Conopophila rufigularis Gld.

Conopophila rufigularis Gld. Handb. i. p. 533; Math. Handl. p. 94.

a. ♂ adult. Inkerman, Oct. 19, 1907. Bill black; feet blue-grey; iris brown.

79. Stigmatops ocularis (Gld.).

Stigmatops ocularis Gld. Handb. i. p. 500; Math. Handl. p. 95.

No. 359. *a.* ♂ adult. Inkerman, April 16, 1907.
„ *b.* ♀ adult. Inkerman, Oct. 3, 1907.
„ *c, d.* ♂ ♂ adult. Inkerman, Oct. 19, 1907.

The female *b*, shot Oct. 3, contained a large egg in the oviduct.

80. Ptilotis chrysotis (Lewin).

Ptilotis lewenii Gld. Handb. i. p. 503.

Ptilotis chrysotis Math. Handl. p. 95.

No. 317. *a.* ♂ adult. Inkerman, March 18, 1907.
„ *b, c.* ♂ ♀ adult. Mt. Elliot (1000 feet), Dec. 1907.

Bill blackish; feet light greyish brown, yellowish behind; iris brown.

81. Ptilotis fascigularis Gld.

Ptilotis fasciogularis Gld. Handb. i. p. 507.

Ptilotis fascigularis Math. Handl. p. 96.

No. 300. *a, b, c.* ♂ and ? ? adult. Inkerman, April 18, 1907.

The three specimens from Inkerman are much more lightly coloured than those in the British Museum, especially on the under parts, the brownish grey of the breast and lower neck being broken up by creamy-white streaks, which merge into the yellow markings on the throat. The lower neck of the typical bird is of a more or less uniform sooty brown, only becoming striated towards the breast; the abdomen and vent being pale buff, faintly streaked with sooty brown. In the Inkerman birds these parts are much paler, being almost white, while the back is likewise lighter and greyer. Only one of the Museum series bears any date, so that it is impossible to say whether the difference is due to abrasion of the plumage or not; in the Inkerman examples the feathers are certainly somewhat worn.

82. PTILOTIS FLAVA Gld.

Ptilotis flava Gld. Handb. i. p. 518; Math. Handl. p. 97.

a, b, c. ♀, ♂, ♂ adult. Inkerman, April 2, Sept., and Oct. 3, 1907. Bill black; feet brown; iris brown.

This species seems to vary considerably in size, but, judging by the three skins sent home by Mr. Stalker and the few examples bearing data in the British Museum, the difference is merely sexual. The average measurements of three males is as follows: wing 3·65 in., tail 3·2 in., culmen 0·75 in.; that of four females: wing 3·35 in., tail 3·1 in., culmen 0·65 in.

83. PTILOTIS UNICOLOR Gld.

Stomiopera unicolor Gld. Handb. i. p. 523.

Ptilotis unicolor Math. Handl. p. 97.

No. 316. ♂ adult. Mount Inkerman, March 18, 1907. Bill black; feet blue-grey; iris grey.

The single skin collected by Mr. Stalker on Mount Inkerman (an isolated hill overlooking a stretch of flat country) differs noticeably from any of the nine specimens in the National Collection. In its general coloration it is olivaceous grey and entirely lacks the brownish hue of the Museum examples and of those described by Gould (*vide* *supra*) and North (Nest & Eggs B. of Austr. vol. ii. p. 151 [1907]), the difference being especially marked on the wings and tail, which are usually the brownest parts of the typical bird. It is also distinguished by the more conspicuous margins to the secondary feathers, these forming, when the wing is closed, a pronounced streak of yellowish green. The under parts are likewise of a clearer olive-grey. Gould describes the irides of *P. unicolor* as being "obscure red," while it will be observed by Mr. Stalker's notes that they are "grey" in my bird. With regard to measurements and in other respects it seems, however, to agree with *P. unicolor*. The Inkerman bird has every appearance of being adult, and the unworn condition of the plumage and the time of year at which it was shot point to its being newly moulted. Unfortunately none of the skins at the British Museum bear any date, so that it is impossible to say whether the difference is merely seasonal or not; but as one of the adult examples in the Museum (killed during the moult) shews half-grown feathers of a *brownish* colour, this explanation does not seem to be very probable.

84. ENTOMYZA CYANOTIS Lath.

Entomyza cyanotis Gld. Handb. i. p. 560; Math. Handl. p. 99.

No. 310. *a, b.* ♂ ♂ adult. Inkerman, March 14, 1907.
" *c, d.* ♂ ♀ adult. Inkerman, April 16, 1907.

Bill blue-black, greenish yellow at base; feet dark blue-grey; iris greyish yellow.

The backs of my four specimens are of a purer green and have less of the golden tinge; they otherwise agree closely with the series in the British Museum.

85. TROPIDORHYNCHUS CORNICULATUS (Lath.).

Tropidorhynchus corniculatus Gld. Handb. i. p. 545; Math. Handl. p. 100.

No. 318. ♂ adult. Mount Elliot. Townsville, Dec. 1, 1907. Bill black; feet black, steely grey tarsi; iris very pale brown.

86. Philemon citreogularis Gld.

Tropidorhynchus citreogularis Gld. Handb. i. p. 519.

Philemon citreigularis Math. Handl. p. 100.

a. ♀ adult. Inkerman, Oct. 3, 1907.

b. ♀ adult. Inkerman Spring, Sept. 1907.

Bill black; feet greyish black; iris creamy brown.

87. Mirafra horsfieldi Gld.

Mirafra horsfieldi Gld. Handb. i. p. 404; Math. Handl. p. 100.

No. 362. *a.* Adult. Inkerman, Oct. 9, 1907. Bill brown; feet creamy brown; iris brown.

In his 'Handlist' Mr. Mathews gives S. Queensland, New South Wales, Victoria, and S. Australia as the habitat of this species. Its occurrence at Inkerman, North Queensland, is therefore of interest. The plumage of this example is exceptionally dark.

88. Stictoptera bichenovii (Vig. & Horsf.).

Stictoptera bichenovii Gld. Handb. i. p. 409; Ingram, Ibis, 1907, p. 415; Math. Handl. p. 102.

No. 319. ♀ adult. Inkerman, April 3, 1907. Bill and feet bluish black; iris brown.

Mr. Stalker remarks on the label that this bird was shot from a nest containing five eggs.

89. Poëphila cincta Gld.

Poëphila cincta Gld. Handb. i. p. 425; Math. Handl. p. 103.

No. 324. ♂ ♀. Inkerman, April 2, 1907. Bill black; feet creamy buff; iris brown.

By their covering of soft, weakly-barbed feathers, it is apparent that these birds are in immature plumage, which no doubt explains their very dull and pale coloration. In other respects they resemble typical examples.

90. Oriolus sagittarius Lath.

Mimeta viridis Gld. Handb. i. p. 462.

Oriolus sagittarius Math. Handl. p. 104.

No. 364. *a, b.* ♂ ♀ adult. Inkerman, Oct. 19, 1907. Bill reddish brown; feet blue-grey; iris brick- to orange-red.

These two birds are typical examples of the form *Oriolus viridis*, a species separated by most authors from *O. affinis* (Gld.).

91. SPHECOTHERES STALKERI Ingram.

Sphecotheres stalkeri Ingram, Bull. B. O. C. vol. xxi. p. 100.

No. 390. *a*, *b*. ♂ ♂ adult. Mount Elliot, Dec. 1907. Shot from flock of 68.

This interesting bird is most nearly allied to *Sphecotheres salvadorii* Sharpe, of British New Guinea, and is only the third member of this genus found in Australia. It differs from *S. salvadorii* in having the grey of the throat flecked or faintly streaked with white, especially on the sides of the neck below the auriculars, these parts being of a uniform and somewhat darker grey in the typical bird. The back is of a slightly greyer green, and the yellow on the under surface is conspicuously paler and more extensive, there being much less green on the upper breast. In this species three, instead of four, of the outer tail-feathers are marked with white. Measurements as in *S. salvadorii*. Habitat: Mount Elliot, Queensland.

92. CHIBIA BRACTEATA Gld.

Chibia bracteata Gld. Handb. i. p. 235; Math. Handl. p. 104.

No. 313. *a*. ♂ adult. Mount Inkerman, March 11, 1907.
,, *b*. Sex? adult. Inkerman, April 10, 1907. Bill and feet black; iris brown.

93. CHLAMYDODERA ORIENTALIS Gld.

Chlamydodera orientalis Math. Handl. p. 106.

No. 306. *a*. ♀ adult. Inkerman, April 21, 1907. Bill dark brown, yellow at base; feet dark greenish grey; iris brown.
,, *b*. ♂ adult. Inkerman, Sept. 1907. Bill dark sepia-brown; feet deep grey; iris brown.

Mr. Stalker briefly remarks on the back of the label that "the lilac on the nape is spread into a rosette when the bird is dancing," a note which seems to indicate that the bird was indulging in a kind of "display" at the time that it was shot.

In writing of *Chlamydodera maculata* Mr. North describes these antics as follows:—"Standing on tip-toes, with lowered head and the pink frill on the nape erect, the male will run, sometimes sideways, through and around the bower, stopping perhaps to alter a decoration or to throw up his wing, or lie down on his side" (Nests & Eggs B. of Austr. vol. i. p. 46). In my journal I describe the playground of this species as follows:—"It was built near a clump of small 'sandal-wood' trees upon an open and exposed piece of ground so that it could easily be seen from a distance. The neat alley-way of sticks was well and firmly put together and was adorned at both ends by an assortment of bleached bones, mixed with a few shells and stones of the 'wild plum' fruit. There were also a few pebbles and pieces of glass among the decorations."

XIX.—*On the Breeding of the White-necked Crane* (Anthropoides leucauchen) *at Gooilust, 'sGraveland.* By F. E. Blaauw, C.M.Z.S., M.B.O.U.

A pair of White-necked Cranes, which I had kept in an enclosed garden in my park for five years, began to nest for the first time in May 1906, and at the present moment (April 1908) the birds are sitting on two eggs for the third time.

The garden in which they are kept has a small pond, which is partly surrounded by conifers and Japanese bamboos and is fully exposed to the sun. On a little elevation near the edge of the pond, amidst tall-growing weeds, the nest was placed, composed of a few dry stalks. The first egg was laid on the 12th of May and the second followed two days later. Incubation began as soon as the first egg was laid.

The enclosure being kept very quiet, the birds remained rather shy and thus gave me an opportunity of observing them in all their wild little ways. For instance, if I passed at some distance from the nest without apparently noticing it, the sitting bird would lie quite flat, stretching head and neck before her on the ground in the way Kentish Plovers are apt to do. If I stopped at some distance from the nest and for a time turned my back to it, I invariably found, when I turned round, that the birds were gone and were very conspicuous a good way off.

In the pond near the nest a quantity of papyrus (*Cyperus pungens*) grew, and whilst incubation was going on one of the birds, I believe the male (but am not quite sure, as they are so very much alike that I only know them when seen together), was often busy breaking up the stalks of one of the biggest tufts of papyrus and making a platform of them. I wondered at the time what the object was, but we shall see later that he knew very well what he was about.

On the 14th of June the first egg was hatched, and the head of the chick was often visible peeping from under its parent's wing. As the bird remained on the nest notwithstanding the chick, I had great hopes that the second egg would be hatched, and, as luck would have it, this was the case, for two days later number two also broke its shell.

The weather was warm and sunny, and as soon as the second chick was strong enough, the parents began to lead both of them about, diligently feeding them with earthworms. If I came upon them by surprise the old bird would make a sharp noise and the chicks would then run away and hide amongst the tall-growing weeds. One day I surprised the family in a corner of the garden from which there was no exit without passing in full view of me. The male ran up to me, rushed past me and began to mimic a wounded bird, tumbling about in a desperate way and advancing all the while in a direction opposite to that where I surprised the family. I followed the bird, and apparently when he found that he had led me away far enough (the female having in the meantime stolen away with the chicks) he suddenly gave up the game, sprang to his feet, bowed to me and danced, as if vastly amused by the success of his trick, and finally ran away.

Coming into the garden rather late one night I found out what the use of the papyrus platform was. On it sat the female, secure in the middle of the pond with the two chicks under her wings, and at some distance, standing on one leg in the water, was the male, keeping watch over the family.

As the chicks grew they would run farther away if anybody came near, and would then generally be followed by the female. The male, however, would follow *me* in my wanderings through the garden and would not let me out of sight until I had again left the enclosed space.

The chicks were clothed with rufous down, darker above and whiter below. At the age of three weeks they were about the size of a common fowl, but higher on the legs and with slighter bodies. At five weeks feathers began to appear on the shoulders. At six weeks the bodies were nearly half-grown, but the legs were comparatively much more developed. At this period the down of the tail, probably with growing feathers at the base, was very long and conspicuous.

On the 4th of September the chicks were more than three-quarters grown and fully feathered. The first feathers are grey with rufous edges. The grey is darkest and the rufous edges most conspicuous on the upper parts; on the under parts the grey is lighter and the brown not so well defined. The parts of the hind-neck which are *white* in the adults are *bright rufous* without any grey in the young birds. The legs are of a greyish flesh-colour and the bill of a yellowish flesh-colour. The head is entirely feathered. The primaries are black with white shafts as in the adults. The inner secondaries are slightly falcated and elongated, but to a lesser degree than in adult birds.

The parents would not take any bread or meat offered to them, but fed the young almost entirely on earthworms and insects, which they provided themselves. Each of the old birds had generally one chick standing near it and was busy all day feeding it, constantly turning up the soil in search of earthworms. The chicks uttered a soft whistling sound while being fed.

As they grew older the young began to eat grain, and also later took bread and meat for themselves, whilst twice a week a liberal supply of living shrimps was much appreciated.

One of the young birds was much browner than the other, and appeared from its general aspect to be a female.

During the first days of September I noticed that the larger of the two young birds followed the parents less closely than it was wont to do and did not hide in the bushes as I approached, but kept more in the open. Altogether it began to look more independent and self-possessed. This, according to my experience, meant that the bird could fly and was aware of it. I therefore resolved to try to move the birds into a covered enclosure and to cut their wings. To effect this the family had first to be driven into a small open enclosure, which had an opening into one that was covered with wire netting. The experiment was tried on the 7th of September. The old birds and one of the young went into the first enclosure without any difficulty, but the second young one, which I had suspected of knowing its power of flight, refused to enter the open enclosure and instead took to flight, flying right away at a good height. I thought that I should lose the bird, but after a while, to my delight, I saw it come back, circling over the place where I stood, and finally alighting in the identical small open enclosure in which the rest of the family were. It was a beautiful sight, but my anxiety about losing the bird almost spoilt my enjoyment of it.

The birds henceforth went without any difficulty into the covered place where the wings were to be cut.

In the last half of September the bills of the young birds began to assume the greenish colour proper to the adult. The colour began at the tip of the bill and gradually advanced towards the head. In the last week of September I noticed that some of the blue-grey feathers of the adult dress began to appear on the breast and along the sides of the neck, whilst at the back of the neck some pure white feathers became visible. I was rather surprised to observe this, as the birds, only three and a half months old, had in fact just finished growing their first feathers and were not even quite full-grown. The white colour increased with extraordinary rapidity, and also the general moult, so that on the 16th of October the birds could be described as follows:—

Bill greenish as in the adults, but flesh-coloured at the base; the head still entirely feathered and brown; the *hind*-neck completely white from the base of the head downwards; the white of the neck surrounded by blue-grey feathers as in the adults; fore part of neck and breast and under parts mottled with blue-grey feathers, which daily increased in number and also appeared on the upper parts; the legs assumed gradually the bluish-pink colour found in the adults.

On the 20th of November the head was still brown except the ear-coverts, which had become grey. The throat and sides of head, which are white in the adults, had assumed a pale blue colour, and the bare red skin of the head was becoming slightly visible. The body was also moulting fast.

On the 19th of December the occiput was becoming white and the pale blue-grey throat was turning white, as were the sides of the head.

By the 1st of February, 1907, the white throat and side-head markings had become more apparent, the face had become red and bare, and the black hairs were sprouting.

On the 20th of February the birds had nearly completed their changes, only the flight-feathers with some of their coverts and perhaps also the tail-feathers being then retained. There was still some brown in the white of the occiput, and the white and blue neck-markings, although quite distinct, were not so sharply defined as in the old birds. In the course of the summer the last remains of the immature dress disappeared.

XX.—*Further Notes on rare Palæarctic Birds' Eggs.*

By H. E. Dresser, F.Z.S., M.B.O.U., &c.

(Plate X.)

In continuation of former papers on this subject published in 'The Ibis,' I beg leave to offer further notes on some rare and unfigured eggs of birds of the Eastern Palæarctic area with illustrations.

(1) Rhopophilus albisuperciliaris. White-browed Babbler. (Plate X. fig. 3.)

Rhopophilus albisuperciliaris Dresser, Man. Pal. B. p. 146.

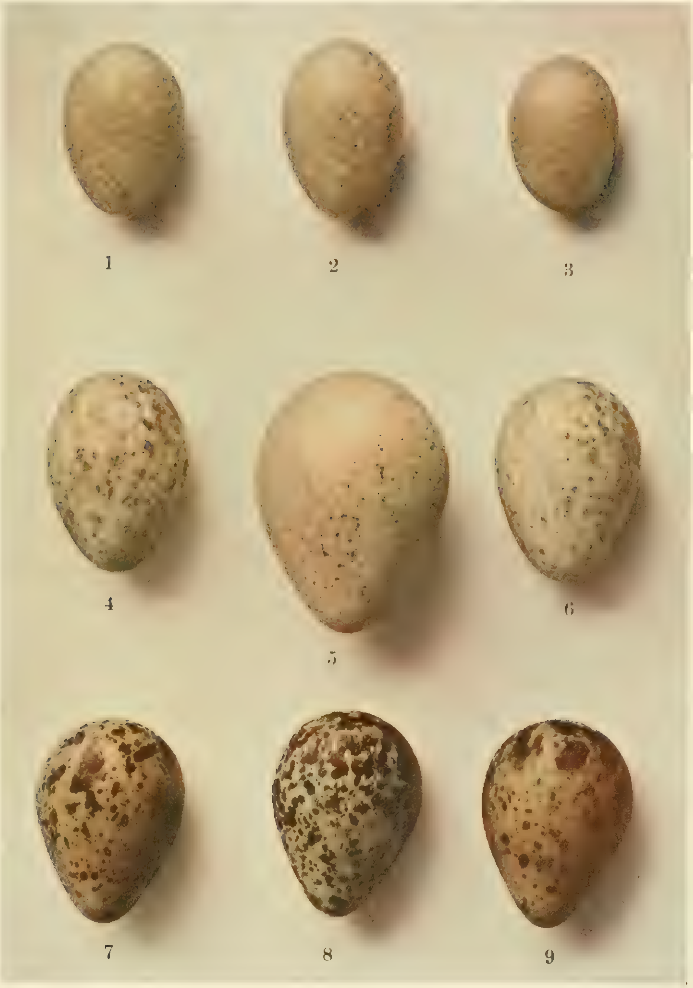
I have never been able to get any information respecting the nidification of this species, but seeing that there was an egg of it in the Stoate collection, recently sold by auction, I secured it and find that it is marked in the handwriting of Mr. D. Scully: "*Suya albosuperciliaris*, Yarkand, 13 June, 1875." On referring to 'Stray Feathers,' iv. p. 147, I find that Mr. Scully stayed the whole of June 1875 at Yarkand, and states that "this species is tolerably common in the plains of Eastern Turkestan, where it is said to be a permanent resident. It has a rather sweet plaintive note, and frequents long grass and bushes growing near rivers and streams. It breeds in May and June." Mr. Scully does not give any particulars of its nesting-habits, but I think that these eggs may be regarded as sufficiently identified.

(2) Otocorys elwesi. Elwes's Shore-Lark. (Plate X. figs. 1, 2.)

Otocorys elwesi Dresser, Man. Pal. B. p. 379.

It is not easy to get properly authenticated eggs of this Shore-Lark, and until I obtained a clutch along with the parent bird from Tibet I did not place representatives of them in my collection, as I could only obtain them from dealers. The two eggs now figured belong to that clutch of which full particulars were given in 'The Ibis' for 1906 (pp. 342, 343), so that I need not repeat them here.

Ibis 1908 Pl. X.



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EGGS OF EASTERN PALÆARCTIC BIRDS

(3) PODOCES PLESKII. Persian Ground-Chough. (Plate X. figs. 4, 6.)

Podoces pleskii Dresser, Man. Pal. B. p. 407.

So far as I can ascertain, the only authentic eggs of the present species are those obtained by Mr. N. Zarudny in Persia, which now belong to the Imperial Zoological Museum at St. Petersburg, for, although Mr. Zarudny sent a clutch to me, they were lost on the way and were never received. I am, therefore, indebted to Professor Bianchi, of St. Petersburg, for the loan of the two eggs figured, which were taken by Mr. Zarudny on the 27 April/10 May 1896.

I am much obliged to Mr. Zarudny for the following notes respecting the breeding-habits of the present species, which are, he informs me, a brief abstract of an article by him, published in Russian (Mém. de l'Acad. Imp. des Sciences de St. Pétersbourg, x. no. 1, 1900) :—

" *Podoces pleskii* inhabits the dry, lonely plains of Eastern and Central Persia, selecting such places for the purpose of nidification as are more or less densely covered with shrubs or low trees. The nests are placed on small elevations of the ground among various kinds of desert shrubs. In outward appearance, like those of *Podoces panderi,* they resemble the nests of *Bucanetes obsoletus,* though naturally much larger. Of many that I found, only one was placed on a Pistacia-tree and very few on low trees (*Haloxylon*). All the rest were in shrubs from two to three feet from the ground, and in one instance, as stated below, only about six inches from the ground. The birds are especially fond of building in prickly shrubs, where the nests are very difficult to get at, and the same bush is tenanted several years in succession. In one shrub I found three nests placed one above the other, the topmost of which was tenanted, the central one having been occupied the previous year and the bottom one, I suppose, the year before that. As in the case of *Podoces panderi,* the nest has a light roof or dome in which are two apertures, one for access and the other for egress. The nest has two walls, the outer loosely constructed of slight branches and small twigs—so loosely that the inner nest is easily seen; the inner wall is closely and compactly built of tamarisk-down, cotton, goat's and sheep's hair, and wool intermixed with vegetable material, while the dome or roof, which is curved in shape, is constructed of the same materials as the outer wall. One nest was in an *Artemisia*-shrub, only about six inches above the ground. This shrub consisted of a short, sound stem with numerous old and fresh branches forming a dense clump. In making their nest the birds had removed some of the upper ends of the central branches and formed a cup-shaped recess, thus rendering the outer nest-wall unnecessary, it being replaced by the branches surrounding the recess. The dome-shaped roof was placed well above the nest, and had only one hole instead of two as is usually the case. The dimensions of the nests were as follows:—

"Height of nest from the base to the top of the roof 240 to 260 mm. Height from the edge of the nest to the top of the roof 130 to 150 mm. Height of the nest itself 100 to 130 mm., width of the nest at the top 112 to 160 mm., depth of the nest 48 to 70 mm. Diameter of the opening to the nest itself 81 to 110 mm.

"The full clutch consists of four or five eggs. In one instance I found six, but one was imperfect. At the end of April (old style) in most cases the young were hatched, and when I found eggs they were much incubated.

"I may add that *Podoces pleskii* is a rare species, and only found in Persia in a few localities far from towns and villages."

(4) ÆGIALITIS PLACIDA. Long-billed Ringed Plover. (Plate X. fig. 5.)

Ægialitis placida Dresser, Man. Pal. B. p. 739.

The only place from which I have been able to procure the eggs of this Plover is Japan, whence I obtained a clutch of four eggs, taken at Tamagawo, Musashi, on the 24th of May, 1898. It breeds in stony plains on the borders of rivers, and, like *Æ. hiaticola*, makes no nest, but places its eggs on the ground amongst small stones. According to

Père Armand David, it breeds in China on the Tche-kiang and Kiang-si Rivers. The egg figured is one of the above-named clutch.

(5) TRINGA RUFICOLLIS. Eastern Little Stint. (Plate X. figs. 7, 8, 9.)

Tringa ruficollis Dresser, Man. Pal. B. p. 771.

The clutch of eggs figured, for the loan of which I am indebted to Professor Bianchi, belongs to the Imperial Zoological Museum of St. Petersburg, and is, I believe, the only authentic clutch known. They were obtained by Dr. Bunge in the Delta of the Lena, North Siberia, and were recorded by him (Bull. Acad. Imp. des Sciences de St. Pétersb. xxix. p. 441) as those of *Tringa minuta*, but Mr. Buturlin, who examined the birds collected by Dr. Bunge, informs me that they were certainly *Tringa ruficollis* and not *T. minuta*. Dr. Bunge stated that this Stint (*Talerchadschi*, Jakutsk) was the only species of *Tringa* which he found breeding on Sagastyr, in the Lena Delta. The birds fly continually backwards and forwards, fluttering like Bats, and uttering an uninterrupted shrill churring note. On June 24th (July 6th) he found a nest containing three eggs, and between July 12th and 16th (24th and 28th) young in down were seen, not only in the delta of the Lena but also in about 70° N. lat. On July 24th (August 5th) the young were nearly able to fly. In the New Siberian Archipelago the first examples of this Stint were observed on June 4th/16th, and on the 8th/20th of that month they were more numerous. On June 18th/30th a nest was found containing fresh eggs; on the 12th and 17th (24th and 29th) of July young in down were seen, and on the 1st/13th of August fully fledged young were met with. About the 15th/27th of July fully fledged young birds were seen on Anadyr, on the 28th of July (9th August) in Mechigmensk Bay, and on the 1st/13th of August in Plover Bay.

The nest is a mere depression in the moss with a lining of dry willow-leaves about an inch thick.

These notes are taken from Mr. Buturlin's 'Limicolæ of the Russian Empire' (ii. pp. 133, 134), in Russian, and have been kindly translated for me by Mr. Buturlin, who adds in his letter that, so far as he can recollect, only one of the two clutches of eggs above referred to, namely, that taken in the delta of the Lena, was brought to St. Petersburg. *Tringa ruficollis*, Mr. Buturlin writes, does not occur west of the Lena, and all the Stints found breeding west of that river, and all the specimens collected by von Middendorff, prove to be referable to *Tringa minuta*.

EXPLANATION OF PLATE X.

Eggs of

Figs. 1, 2. *Otocorys elwesi*, p. 486.
„ 3. *Rhopophilus albisuperciliaris*, p. 486.
„ 4, 6. *Podoces pleskii*, p. 487.
„ 5. *Ægialitis placida*, p. 488.
„ 7, 8, 9. *Tringa ruficollis*, p. 489.

XXI.—*Contributions to the Ornithology of Egypt.*

By Michael J. Nicoll, M.B.O.U.

No. I.—Lake Menzaleh.

The following paper is based chiefly on a collection of birds made during a short stay in the vicinity of Lake Menzaleh, at the beginning of January 1908.

I left Cairo on January 4th, accompanied by Capt. J. W. H. Seppings, of the Army Pay Department. By kind permission of the Director of the Coastguard Administration we used the " Rest-House " at Gheit-el-Nassara, which is situated on the edge of Lake Menzaleh about two miles from Damietta.

At this place the cultivation extends almost to the edge of the lake, only a narrow border of marshland intervening. Near the Rest-House, however, there is a strip of sandy ground, and most of our collecting was done on the edge of the cultivated land, for it was there that birds were most numerous. At the time of our visit, however, there were no noticeable changes in the numbers, as the spring migration had not commenced, and all the species met with were either winter-visitors or residents. The latter, moreover, compare unfavourably with the enormous numbers of birds which pass through Egypt on migration. Altogether eighty-seven species of birds were met with during a week's stay at Gheit-el-Nassara, the most interesting of which were:—Both forms of Bluethroat (*Cyanecula suecica typica* and *C. s. leucocyanus*), Richard's Pipit (*Anthus richardi*), the resident form of Blue-headed Wagtail (*Motacilla flava pygmæa*), a Short-toed Lark (*Calandrella minor*), and the Red-crested Pochard (*Fuligula rufina*). Most of the birds that we observed are so well-known that perhaps it is advisable to explain the object of the present paper. Since the publication of Shelley's 'Birds of Egypt' and Gurney's 'Rambles of a Naturalist' little has been written on the ornithology of Egypt proper. The latest information on the subject is a paper in 'The Ibis' for 1906, p. 113, by Mr. W. L. S. Loat, entitled "On a small Collection of Birds from the Vicinity of Lake Menzaleh in the Delta of Egypt." It has therefore occurred to me that a series of papers on the ornithology of this country may prove of interest and perhaps finally lead to the publication of a revised volume on the Birds of Egypt.

The references in the present paper refer to Shelley's 'Birds of Egypt' and Loat's paper in 'The Ibis' as mentioned above.

As regards nomenclature, I have adhered as far as possible to that of Howard Saunders's 'Manual of British Birds,' 2nd edition, though for most of the non-"British" birds I have followed Hartert's 'Die Vögel der Paläarktischen Fauna,' to the author of which splendid work I am indebted for much kind help in the identification of several of my forms.

TURDUS MUSICUS.

Turdus musicus Shelley, p. 66; Loat, Ibis, 1906, p. 114.

A single Song-Thrush was seen on January 9th at Gheit-el-Nassara. This species is a regular winter-visitor to Egypt.

PRATINCOLA RUBICOLA.

Pratincola rubicola Shelley, p. 81; Loat, Ibis, 1906, p. 115.

The Stonechat was frequently met with near the cultivated ground on the edge of the lake. A pair obtained were assuming their breeding-dress; the shedding of the pale edges of the feathers was well advanced.

CYANECULA SUECICA.

Cyanecula suecica Shelley, p. 85; Loat, Ibis, 1906, p. 115.

Bluethroats were exceedingly common in the cultivated parts and also in the reeds on the edge of the marshes. I shot altogether twelve examples—one adult male of the typical form, two of the white-spotted form, two adult females, and the rest immature birds. Adult males are easily identified, but it is impossible to say to which form females and young belong.

The young birds vary considerably among themselves as regards the intensity of the blue collar on the breast; this colour ranges from a deep blackish blue to pale cobalt. In some examples the white band which separates the blue collar from the red band on the lower breast is well-marked; in others it is absent. I notice that birds with the deepest-coloured blue gorget usually have no white band, while those with the pale blue gorget have this line well developed.

All the young males have a more or less well-marked triangular red *patch* on the lower throat, and the chin and upper throat dull isabelline buff, though several have a line of bright blue feathers running from the gape to below the eye. Adult males have the entire chin, throat, and upper breast, with the exception of the "spot," blue, though in the winter all the feathers are edged with buffy white; the edges break off as spring advances. I imagine that young birds moult the feathers of the throat in the spring, for one of my specimens has several new feathers "in quill" on the chin and upper throat.

The subspecies *C. suecica wolfi*, though it has a totally different breeding-range, appears to winter in Egypt in company with the red-spotted form; however, it is not nearly so abundant as the latter. I obtained only two adult males, though another was seen at a short distance.

One of my specimens has a few of the white feathers of the "spot" tipped with reddish, but this colour would undoubtedly wear off with the rest of the tips of the feathers of the throat before the breeding-season. This example I imagine is not a very old bird, as the feathers of the centre of the upper throat are broadly tipped with isabelline-buff. When on the open ground, Bluethroats very seldom allowed me to get a sight of their throat, and it was only by watching them with glasses from a distance that I was able to get a glimpse of the "spot."

ACROCEPHALUS STREPERUS.

Calamoherpe arundinacea Shelley, p. 94.

Acrocephalus arundinaceus Loat, Ibis, 1906, p. 116.

This Reed-Warbler was only seen on two occasions and no specimens were obtained. I doubt if many winter in Egypt.

ACROCEPHALUS STENTOREUS.

Acrocephalus stentoreus Shelley, p. 95; Loat, Ibis, 1906, p. 116.

The Clamorous Reed-Warbler was not uncommon in the thick growth of bulrushes on the marshes, and six examples were obtained. This species, which is resident in Egypt, may at once be distinguished by its long slender bill from the European Great Reed-Warbler (*A. turdoides*) which passes through Egypt on migration. In the resident bird the second primary is shorter than the third, while in the European species the second and third are equal.

The legs of the present species are usually described as slaty brown. All my specimens, however, had these parts lead-coloured, in which respect they agree with *winter* specimens of *A. turdoides*, the tarsi and toes of which, like those of some of the species of *Sylvia*, turn to lead-colour in winter. The females of this Reed-Warbler have slightly shorter wings than the males.

PHYLLOSCOPUS RUFUS.

Phyllopneuste rufa Shelley, p. 102.

Phylloscopus rufus Loat, Ibis, 1906, p. 117.

Great numbers of Chiffchaffs were met with. They were noticed in the reeds on the edge of the lake, in the low trees on the cultivated land, and amongst the growing clover, while they swarmed in the herbage on the edge of the lake and marshes.

The Chiffchaff winters in Lower Egypt. I once heard the song in winter, in December 1906, while by the middle of March all the males are in full song.

The Willow-Wren (*P. trochilus*) was not met with at Gheit-el-Nassara, and, so far as I can at present ascertain, does not winter in Egypt.

CISTICOLA CURSITANS.

Cisticola schœnicola Shelley, p. 97; Loat, Ibis, 1906, p. 116.

The Fan-tailed Warbler was extremely common in the "Birseem" fields in the vicinity of the lake. This species appears to be resident in Egypt.

DRYMŒCA GRACILIS.

Drymœca gracilis Shelley, p. 98; Loat, Ibis, 1906, p. 116.

The Long-tailed Wren-Warbler was even more numerous than the Fan-tailed Warbler; it is likewise resident in Egypt.

MOTACILLA ALBA.

Motacilla alba Shelley, p. 126; Loat, Ibis, 1906, p. 117.

The White Wagtail was abundant everywhere. It is a winter-visitor in Egypt, arriving in October and departing in March.

MOTACILLA MELANOPE.

Motacilla sulphurea Shelley, p. 126.

Mr. Loat did not meet with this species. We saw a single example feeding along the edge of a stream of water close to the Rest-House at Gheit-el-Nassara. A few remain in the Zoological Gardens at Giza throughout the winter months.

MOTACILLA FLAVA PYGMÆA Brehm.

? *Motacilla flava* Loat, Ibis, 1906, p. 117.

The Egyptian form of the Grey-headed Wagtail was very abundant in the clover-fields round Damietta, and three examples were obtained, two males and one female.

This subspecies differs from *Motacilla flava cinereocapilla*, as well as from all the other forms of the Blue-headed Wagtail, in its small size and short wing and tail; these peculiarities are very noticeable during flight; the wing-bars are only faintly marked. Adult males have a very small white eye-stripe, though in some specimens it is hardly discernible.

I have specimens of this Wagtail shot in the neighbourhood of Cairo from September to May. Those obtained during May were feeding young, so there is no doubt that this species remains in Egypt throughout the year. Such being the case, it is interesting to find that there is a perfectly distinct form of *Motacilla flava* resident in the Nile Delta.

Motacilla flava typica, *M. f. borealis*, and *M. f. melanocephala* all pass through Egypt on migration.

ANTHUS PRATENSIS.

Anthus pratensis Shelley, p. 131; Loat, Ibis, 1906, p. 118.

Next to the Red-throated Pipit, this species was the most abundant Pipit at the time of our visit. It is a winter-visitor to Egypt. One specimen was obtained.

ANTHUS CERVINUS.

Anthus cervinus Shelley, p. 131; Loat, Ibis, 1906, p. 131.

Red-throated Pipits were found in numbers on every damp or cultivated spot in the vicinity of Gheit-el-Nassara. I consider them to be the most abundant of all the winter-visitors to Egypt. It is impossible to walk through a field in Lower Egypt without putting up scores of these birds. In a day's walk thousands of them may be met with. The call-note differs from that of all other palæarctic Pipits, though it somewhat approaches in character that of the Tree-Pipit. It is a long-drawn "chēēp!" more like the call of a Reed-Bunting (*Emberiza schœniclus*) than anything else I know. Old females and young males have red throats by December, while the adult males have this colour extended over a great part of the breast as well. Young females much resemble Meadow-Pipits, but the spotted rump of the Red-throated Pipit is always a characteristic feature. The dark streaks on the *under* tail-coverts are not always present.

ANTHUS SPIPOLETTA COUTELLII.

Anthus spinolettus Shelley, p. 132.

Anthus spipoletta Loat, Ibis, 1906, p. 118.

Anthus spinoletta coutellii Hartert, Vögel der Pal. Fauna, Heft iii. p. 281.

Water-Pipits were frequently met with on the edge of Lake Menzaleh, and one specimen was obtained. I have followed Dr. Hartert in separating the Egyptian Water-Pipit as a subspecies. All examples that I have so far shot in Egypt certainly differ considerably in coloration from those which I have obtained in England.

ANTHUS RICHARDI.

Anthus richardi Loat, Ibis, 1906, p. 118.

Mr. Loat appears to have been the first to record the occurrence of Richard's Pipit in Egypt.

I met with several examples near the Rest-House. They were nearly always in pairs and were exceedingly shy, so much so that I was not able to obtain more than one specimen. The loud call-note "Riēp" is audible from a great distance, and is apparently only uttered when the bird is on the wing.

HIRUNDO SAVIGNII.

Hirundo ricourii Shelley, p. 121; Loat, Ibis, 1906, p. 117.

Several examples were seen every day flying over a large sheet of water near the edge of the lake. This species is resident in Egypt.

CARDUELIS ELEGANS.

Carduelis elegans Shelley, p. 152.

Mr. Loat does not seem to have met with Goldfinches near Damietta. A few hours before I left I saw a small flock in some low trees near the Coastguard Station, but had no gun with me at the time, consequently I am not sure to what form these birds belonged. A few pairs of Goldfinches nested in the Giza Zoological Gardens in 1907.

LINOTA CANNABINA.

Linota cannabina Shelley, p. 154; Loat, Ibis, 1906, p. 119.

A very few Linnets were seen and no examples were obtained.

This species is a winter-visitor to Egypt.

PASSER DOMESTICUS INDICUS.

Passer domestica subsp.? Hartert, Vögel der Pal. Fauna, ii. p. 151.

Passer domesticus Shelley, p. 148.

Abundant in the cultivated country.

PASSER HISPANIOLENSIS.

Passer salicicola Shelley, p. 149.

We did not meet with this Sparrow at Damietta, and up to the present time I have not seen it wild in Egypt. Since our return, however, I have received the skin of an adult male obtained by Lieut. J. B. Jenkinson at Ras-el-Khalig, a few miles from Damietta. Mr. Jenkinson informs me that he shot this bird out of a small flock. I also possess the skin of an immature male of this species, captured at sea on October 27th, 1907, within sight of the coast, a few miles off Port Said.

GALERIDA CRISTATA NIGRICANS.

Galerita cristata Shelley, p. 138.

Alauda cristata Loat, Ibis, 1906, p. 118.

Galerida cristata nigricans Hartert, Vög. der Pal. Fauna, iii. p. 227.

Crested Larks were numerous on the cultivated ground and on the strip of desert close to the edge of the lake. All those seen belonged to the well-marked form which ranges throughout the Nile Delta from Damietta to Cairo.

ALAUDA ARVENSIS.

Alauda arvensis Shelley, p. 139; Loat, Ibis, 1906, p. 119.

The Skylark was less abundant than the Crested Lark, though numbers were seen in the clover-fields.

The form which winters in Egypt is darker and greyer than the British.

CALANDRELLA MINOR.

Three examples of this little Lark were obtained, and several more were seen, on some artificially made sandbanks near the edge of the lake. The flight of this bird is very buoyant, and it utters a low musical twittering when flying.

EMBERIZA MILIARIA.

Emberiza miliaria Shelley, p. 144.

A pair of Corn-Buntings were seen on January 10th on the cultivated land at Gheit-el-Nassara. I have obtained specimens near Giza in March, but do not think that this species is a resident.

STURNUS VULGARIS.

Sturnus vulgaris Shelley, p. 157; Loat, Ibis, 1906, p. 119.

A few small flocks of Starlings were seen near the lake, but no specimens were obtained. A bird obtained at Giza belongs to this form.

This species does not seem to be abundant in Egypt, and the few examples met with during the winter were extremely shy and difficult to approach.

CORVUS CORNIX.

Corvus cornix Shelley, p. 159.

Corvus cornix sharpei Hartert, Vögel der Pal. Fauna, Heft i. p. 10.

Hooded Crows were seen in numbers from Cairo to Tanta. At the latter place, however, they were not numerous, though a few old nests were seen in the trees near the station. After leaving Tanta no more Crows were met with.

Compared with British examples the Egyptian Hooded Crow is much paler. At present I have had no opportunity of comparing it with the true *C. cornix sharpei* from India, and as it is strictly a resident in Egypt, though of local distribution, I hesitate to place it under the same name as the Indian bird. I believe, however, that the Egyptian Hooded Crow has lately been subspecifically named.

IYNX TORQUILLA.

Yunx torquilla Shelley, p. 161.

Iynx torquilla Loat, Ibis, 1906, p. 119.

I shot a Wryneck on January 6th close to the Coastguard Station. This was the only example that we met with, and although it is a regular migrant in autumn and spring to and from its winter-quarters, it was somewhat of a surprise to find it here in January.

UPUPA EPOPS.

Upupa epops Shelley, p. 165.

I saw a few Hoopoes from the train between Cairo and Damietta, but none were observed at Gheit-el-Nassara. Mr. Loat does not mention this species.

ALCEDO ISPIDA BENGALENSIS.

Alcedo ispida Shelley, p. 165; Loat, Ibis, 1906, p. 119.

A single example of this Kingfisher was seen in a small reed-girt pond. It is a winter-visitor to the neighbourhood of Cairo.

CERYLE RUDIS.

Ceryle rudis Shelley, p. 167; Loat, Ibis, 1906, p. 119.

The Pied Kingfisher was frequently noticed during the journey from Cairo to Tanta, after which it became much scarcer and was not seen at all at Damietta. This species is resident in Egypt.

CIRCUS ÆRUGINOSUS.

Circus æruginosus Shelley, p. 181; Loat, Ibis, 1906, p. 120.

The Marsh-Harrier was the most abundant raptorial bird at Gheit-el-Nassara. Both adult and immature examples were observed, but owing to their excessive shyness no specimens were obtained.

FALCO PEREGRINUS.

Falco peregrinus Shelley, p. 186; Loat, Ibis, 1906, p. 120.

Peregrines were sometimes seen harrying the Dunlins along the edge of the lake.

FALCO SACER.

Falco saker Shelley, p. 190.

A Sacer Falcon was seen on a small island in Lake Menzaleh.

FALCO SUBBUTEO.

Falco subbuteo Shelley, p. 192.

I saw two Hobbies at Gheit-el-Nassara during our stay there.

FALCO ÆSALON.

Falco æsalon Shelley, p. 191.

A single example was seen at Gheit-el-Nassara.

TINNUNCULUS ALAUDARIUS.

Falco tinnunculus Shelley, p. 194.

Kestrels were numerous between Cairo and Tanta; after the latter town they became scarcer and very few were seen at Gheit-el-Nassara.

Compared with British examples, the Egyptian Kestrels are smaller and more heavily marked, while those from the Sudan (Khartoum) appear to be much paler in coloration.

MILVUS MIGRANS ÆGYPTIUS.

Milvus ægyptius Shelley, p. 196; Loat, Ibis, 1906, p. 120.

The Yellow-billed Kite was seen in numbers as far as Tanta. At that place it became less numerous, while none at all were seen at Damietta or Gheit-el-Nassara.

MILVUS REGALIS.

Milvus regalis Shelley, p. 195.

Capt. Shelley did not personally meet with the Kite in Egypt. I fancy, however, that it occurs occasionally, for I saw two undoubted examples shortly after leaving Tanta in the train for Damietta.

PANDION HALIAËTUS.

Pandion haliaëtus Shelley, p. 203.

I saw an Osprey on January 10th close to the Coastguard Station at Gheit-el-Nassara.

ARDEA CINEREA.

Ardea cinerea Shelley, p. 266; Loat, Ibis, 1906, p. 122.

Grey Herons were exceedingly numerous, both on the islets in Lake Menzaleh and on the marshes at Gheit-el-Nassara. I obtained no skins of this species, but purchased three examples alive, one adult and two immature, which had been netted on the lake.

ARDEA ALBA.

Herodias alba Shelley, p. 267.

We saw about twenty Great White Herons sitting on an island in Lake Menzaleh on January 7th.

Mr. Loat does not seem to have met with this bird near Damietta.

PHŒNICOPTERUS ROSEUS.

Phœnicopterus antiquorum Shelley, p. 272; Loat, Ibis, 1906, p. 122.

One of the chief objects of our visit to Damietta was to obtain living examples of the Flamingo. It seemed, however, that we were a few weeks too early, for, although thousands were seen, the fishermen had not begun to catch them in any quantity, owing to the water being still too high.

These birds are netted by the fishermen in large numbers yearly, and are used as an article of diet. When the water is sufficiently low the birds are driven into long flight-nets. At the time of our visit very few of the nets were being worked, but in many of the parts of the lake frequented by the birds long lines of reeds were stuck up in the water. This, it seems, is done some time before the netting takes place, so as to get the birds accustomed to the nets and poles, and certainly these reeds with their feathery tops have every appearance of a line of nets when seen from a distance.

We saw, moreover, many birds—Flamingos, Pelicans, and Ducks—fly through the lines of reeds when put up by our steamer. The annual "take" of water-fowl on Lake Menzaleh must be very great. Most of the birds are sent to local markets, but a good many reach Cairo, by which time, however, they are nearly dead from the rough handling which they have experienced during and subsequent to capture.

A long line of Flamingos was seen daily from the "Rest-House," and their hoarse cries were continually heard, although the birds themselves were at least a mile from the edge of the lake. I saw a bird in first plumage with black legs in the market-place at Gheit-el-Nassara.

We were unable to ascertain for certain whether Flamingos nested on Lake Menzaleh or not. Some of the local fishermen assured us that they did, but others said that they were migratory. It is probable that the majority of Flamingos seen on the lake during the winter are immigrants, but there seems to be no reason why some should not remain and breed.

PHALACROCORAX CARBO.

Phalacrocorax carbo Shelley, p. 295.

Large quantities of Cormorants were seen on the lake near Matariah; all of them appeared to be of this species. I have one skin of this Cormorant, which was shot from a flock of twelve near Giza, December 1907.

PELECANUS CRISPUS.

Pelecanus crispus Shelley, p. 293.

Several Pelicans of this species were seen on Lake Menzaleh, near Matariah.

PELECANUS ONOCROTALUS.

Pelecanus onocrotalus Shelley, p. 293.

This appears to be the most abundant species of Pelican in Lower Egypt during the winter. Great numbers were seen on Lake Menzaleh.

Judging from the specimens now living in the Giza

Zoological Gardens, the males are slightly larger and have a much greater development of the "knob" on the forehead than the females.

RALLUS AQUATICUS.

Rallus aquaticus Shelley, p. 273.

I saw a single Water-Rail amongst the bulrushes on a large pond at Gheit-el-Nassara on January 6th.

FULICA ATRA.

Fulica atra Shelley, p. 278; Loat, Ibis, 1906, p. 123.

Enormous numbers of Coots were seen on Lake Menzaleh. During the inundations thousands of Coots are to be met with near Giza, but we have never seen an example of *Fulica cristata* among the many examined. Captain Flower tells me that he has never met with the latter species during a ten years' residence in Egypt, and Capt. Shelley apparently did not obtain a specimen.

ANAS BOSCHAS.

Anas boschas Shelley, p. 283; Loat, Ibis, 1906, p. 123.

The Wild Duck was frequently seen both on the lake and flighting over at dusk, but was not nearly so abundant as the Pintail.

ANAS STREPERA.

Anas strepera Shelley, p. 283.

A single female Gadwall was purchased alive at Matariah, on Lake Menzaleh.

QUERQUEDULA CRECCA.

Querquedula crecca Shelley, p. 286; Loat, Ibis, 1906, p. 123.

A very few Teal were met with; most of these were seen on the marshes during the evening "flight."

MARECA PENELOPE.

Mareca penelope Shelley, p. 288; Loat, Ibis, 1906, p. 123.

Thousands of Wigeon were seen on Lake Menzaleh. When approaching Matariah the water for miles round was covered with Ducks, nearly all of which appeared to belong to this species. We saw one net, a large clap-net, used for these Ducks. It was set on the water about three hundred yards from a small bush-covered island. As we passed the men in charge of the net had just "pulled," and some boys were wading out to secure the Ducks with which the net seemed full. We had no opportunity of examining the nets used, but from a distance they appeared to be similar to those used on the marshes except for their larger size. I imagine, however, that they are floated on the surface, and that it requires at least two men to pull the rope, owing to the distance at which the nest is set from the "hide." I purchased a pair of live Wigeons; the drake was in full plumage.

DAFILA ACUTA.

Dafila acuta Shelley, p. 284; Loat, Ibis, 1906, p. 123.

The Pintail was the most abundant species of Duck at Gheit-el-Nassara during our visit. Numbers came into the marshes at night and many were caught by the local fishermen. Near every pool in the marshes we saw "hides" composed of reeds and bushes, from which these Ducks are caught. The *modus operandi* is as follows:—

About sunset a small clap-net is set on the edge of a pool, and on the ground enclosed by it a few handfuls of small bird-seed are scattered; the fisherman then retires to his "hide," situated about seventy yards from the net, and from this shelter pulls the rope as soon as a Duck has settled in the right spot. The birds thus caught are taken to Damietta, where they are sold alive in the markets. We purchased a few freshly-caught Pintails for about 1*s*. 3*d*. each. Nearly all those taken during our stay were males in full plumage.

SPATULA CLYPEATA.

Rhynchaspis clypeata Shelley, p. 285; Loat, Ibis, 1906, p. 123.

A few Shovelers were seen on the lake.

FULIGULA FERINA.

Fuligula ferina Shelley, p. 289; Loat, Ibis, 1906, p. 123.

Numbers of Pochards were seen on Lake Menzaleh.

Shortly before I left for Cairo a man brought eight of these Ducks to me alive, which I purchased. Only two were males and both were in full plumage.

FULIGULA RUFINA.

Fuligula rufina Loat, Ibis, 1906, p. 123.

Mr. Loat purchased two male Red-crested Pochards during his stay at Damietta. Although Capt. Shelley does not mention this species in his 'Birds of Egypt,' it would seem that the Red-crested Pochard is not very rare during the winter in the vicinity of Lake Menzaleh, for during 1907 several living examples were purchased in Cairo, seven at least of which had been caught on the Lake, and of these three are now living in the Giza Zoological Gardens. Moreover, during our stay at Gheit-el-Nassara I watched for some time a pair of these fine Ducks swimming on a large sheet of water not far from the edge of the lake.

The eclipse plumage of the male almost exactly resembles the plumage of the adult female, except that it is somewhat darker. The red bill of the male is, however, always a distinguishing feature.

FULIGULA CRISTATA.

Fuligula cristata Shelley, p. 290; Loat, Ibis, 1906, p. 123.

Many Tufted Ducks were seen on Lake Menzaleh. This is one of the most abundant species of Ducks in Egypt during the winter months.

GALLINAGO CŒLESTIS.

Gallinago media Shelley, p. 249.

Gallinago cœlestis Loat, Ibis, 1906, p. 121.

The Full Snipe was not so often met with at Gheit-el-Nassara as the Jack-Snipe.

GALLINAGO GALLINULA.

Gallinago gallinula Shelley, p. 249; Loat, Ibis, 1906, p. 121.

The Jack-Snipe was common on the marshes at Gheit-el-Nassara and three specimens were obtained.

ŒDICNEMUS CREPITANS.

Œdicnemus crepitans Shelley, p. 230.

A Stone-Curlew was heard close to the "Rest-House" on the evening of January 7th. This species is resident in Lower Egypt, but at present I have had no opportunity of comparing it with British or European specimens.

SQUATAROLA HELVETICA.

Squatarola helvetica Shelley, p. 236; Loat, Ibis, 1906, p. 120.

Only one Grey Plover was seen—on the edge of the lake.

CHARADRIUS PLUVIALIS.

Charadrius pluvialis Shelley, p. 235.

Mr. Loat did not meet with the Golden Plover, and we only saw one small flock at Gheit-el-Nassara.

ÆGIALITIS CANTIANA.

Ægialitis cantianus Shelley, p. 240.

Ægialitis cantiana Loat, Ibis, 1906, p. 120.

The Kentish Plover was seen in large numbers on the edge of Lake Menzaleh and two examples were obtained. All the specimens of this species which I have examined in Egypt, where it appears to be resident, seem darker in coloration than British examples, but at present I have had no opportunity of comparing them. The tarsi of Egyptian specimens are slaty grey, and, so far as my experience goes, are never black as in British examples. This, however, may be dependent on the time of year, as I have no skins obtained during the breeding-season.

ÆGIALITIS HIATICULA.

Ægialitis hiaticula Shelley, p. 241; Loat, Ibis, 1906, p. 120.

Captain Shelley refers all the specimens of the Ringed Plover which he obtained to *Æ. intermedia.* The two specimens in our collection belong, I should say, to the smaller form which is frequently met with in England. This smaller form I take to be Shelley's *Ægialitis intermedia.*

ÆGIALITIS CURONICA.

Ægialitis minor Shelley, p. 242.

Ægialitis curonica Loat, Ibis, 1906, p. 121.

Little Ringed Plovers were common on the edge of the lake. They were, however, very wild and no specimens were obtained.

VANELLUS VULGARIS.

Vanellus cristatus Shelley, p. 231.

Several Green Plovers were observed from the train shortly before we got to Damietta. The bird is a winter-visitor only, and it is probably owing to this reason that it is not mentioned by Mr. Loat.

TRINGA ALPINA.

Tringa cinclus Shelley, p. 253.

Tringa alpina Loat, Ibis, 1906, p. 121.

Large flocks of Dunlins were met with on the edge of the lake, and many were seen on the small islets. A single example obtained on January 8th was in a curious condition: the black breast and red dorsal feathers of the previous summer plumage had not been completely shed. The new feathers were those of winter plumage. This bird shewed no signs of former injury.

TRINGA SUBARQUATA.

Tringa subarquata Shelley, p. 254.

A few Curlew-Sandpipers were noticed among the Dunlins on the edge of the lake, but no examples were obtained.

TRINGA MINUTA.

Tringa minuta Shelley, p. 251; Loat, Ibis, 1906, p. 121.

Little Stints were met with in large flocks on the edge of the lake. All those seen were in full winter plumage.

TRINGA TEMMINCKI.

Tringa temminckii Shelley, p. 252; Loat, Ibis, 1906, p. 121.

We saw a few Temminck's Stints at Gheit-el-Nassara, but they appeared to prefer pools of water in the marshes and did not frequent the edge of the lake. An example obtained was in full winter plumage.

TOTANUS CALIDRIS.

Totanus calidris Shelley, p. 255; Loat, Ibis, 1906, p. 121.

Several Redshanks were seen on the marshes as well as on the islets in the lake.

TOTANUS FUSCUS.

Totanus fuscus Shelley, p. 255.

Several Spotted Redshanks were seen in the marshes at Gheit-el-Nassara, but no examples were obtained.

TOTANUS CANESCENS.

Totanus canescens Shelley, p. 256; Loat, Ibis, 1906, p. 121.

Greenshanks were seen almost daily in small parties on the marshes.

TOTANUS GLAREOLA.

Totanus glareola Shelley, p. 259; Loat, Ibis, 1906, p. 122.

A few Wood-Sandpipers were seen in the marshes near Gheit-el-Nassara.

TOTANUS OCHROPUS.

Totanus ochropus Shelley, p. 258.

We met with a few Green Sandpipers at Gheit-el-Nassara, but no specimens were obtained.

TOTANUS STAGNATILIS.

Totanus stagnatilis Shelley, p. 257.

We saw two or three Marsh-Sandpipers at Gheit-el-Nassara. They were excessively wild and usually kept to the open part of the marsh near the edge of the lake. No specimens were obtained. Mr. Loat does not appear to have met with this species.

RECURVIROSTRA AVOCETTA.

Recurvirostra avocetta Shelley, p. 260; Loat, Ibis, 1906, p. 122.

A single Avocet was seen on January 10th near the lake.

STERNA FLUVIATILIS.

Sterna fluviatilis Shelley, p. 299.

A few medium-sized Terns seen on Lake Menzaleh I refer to this species.

STERNA ANGLICA.

Sterna anglica Shelley, p. 297.

Several Gull-billed Terns were seen on the lake, while I have skins of this species from Giza and Khartoum. I have also seen *Sterna cantiaca* near Giza in November.

LARUS RIDIBUNDUS.

Larus ridibundus Shelley, p. 309.

The Black-headed Gull is one of the commonest Gulls in Lower Egypt during the winter months. We saw numbers at Gheit-el-Nassara and on Lake Menzaleh. One adult in winter plumage was caught at Matariah and brought back alive.

LARUS ICHTHYAËTUS.

Larus ichthyaëtus Shelley, p. 307.

A living example of this magnificent Gull brought to me had been shot in the wing during a gale at Gheit-el-Nassara. It was just assuming the black head by a moult. We saw several other examples of the Great Black-headed Gull on Lake Menzaleh.

LARUS CANUS.

Larus canus Shelley, p. 305.

The Common Gull was fairly numerous on Lake Menzaleh. Two living examples were brought back alive to Giza.

LARUS ARGENTATUS.

Larus argentatus Shelley, p. 305.

Several Herring-Gulls were seen at close quarters on Lake Menzaleh and clearly identified, although no examples were shot. I once saw this species near Giza in November 1907.

LARUS CACHINNANS.

Larus leucophæus Shelley, p. 304.

Several Yellow-legged Herring-Gulls were seen on Lake Menzaleh.

LARUS FUSCUS.

Larus fuscus Shelley, p. 304; Loat, Ibis, 1906, p. 124.

Several Lesser Black-backed Gulls were seen on Lake

Menzaleh. A large flock was seen daily at Gheit-el-Nassara flying about round the fish-market. At present I cannot perceive any difference between the birds of this species shot here and British examples.

PODICEPS CRISTATUS.

Podiceps cristatus Shelley, p. 312.

A single Great Crested Grebe was seen on Lake Menzaleh during a trip to Matariah.

PODICEPS NIGRICOLLIS.

Podiceps nigricollis Shelley, p. 313; Loat, Ibis, 1906, p. 124.

A great many Black-necked Grebes were seen in Lake Menzaleh as we approached Matariah, and two examples in winter plumage, which had been caught near Matariah, were brought home alive. This species appears to be a regular winter visitor to Egypt.

XXII.—*On the Russian Arctic Expedition of* 1900–1903.

By H. E. DRESSER, F.Z.S., M.B.O.U.

ALTHOUGH the Russian Arctic Expedition of 1900–1903, undertaken under the leadership of the late Baron E. W. Toll, was one of great interest, especially to ornithologists, very little is known of the scientific results except in Russia, as all the details have been published in Russian only (Mémoires de l'Acad. Imp. des Sciences de St. Pétersbourg, viii. sér. vol. xviii. no. 2). I have, therefore, with the assistance of Mr. J. A. Groes, a Russian gentleman now living in England, made the following *résumé* of the ornithological portion of the report on the scientific results of the expedition, which was written by Mr. A. A. Biabynitski-Birulia, biologist to the expedition, whom I had the pleasure of meeting when last in St. Petersburg. The 'Sarja,' the vessel in which the expedition was undertaken, left in July 1900, and the first halt was made in the Gulf where the shore of the Western Taimyr turns sharply to the east in 75° 52′ N. lat. and 92° 59′ E. long. Here the explorers remained three weeks, until the 3rd/16th September, and then tried to push further north and east, but had finally to cast anchor and take up their winter-quarters in 76° 68′ N. lat. and 95° 9′ E. long. in the roadstead Sarja, where they remained until the 11th/24th August, 1901. Thence ornithological expeditions were undertaken by Dr. Walter, the well-known ornithologist, and Mr. Birulia along the shores of the mainland, across the Taimyr Straits to the south coast of the so-called Taimyr Gulf. Dr. Walter's ornithological notes were published after his death, which took place at Kotelny Island on the 21st December, 1902, and of these I have already given an abbreviated translation ('Ibis,' 1904, pp. 228–235).

After leaving the Taimyr coast the 'Sarja' took a north-easterly course, rounded Cape Chelushkin, and made for the New Siberian Islands, finally taking up her winter-quarters on the west side of Kotelny Island opposite the southern end of Belkorsky Island in Nerpitchi Bay. On the 25th May/7th June Baron Toll, together with Mr. Th. G. Zeberg, astronomer to the expedition, and two men from the Yansk district, left the 'Sarja' and undertook an expedition to Bennett Island, crossing in seal-skin canoes and leaving instructions that the 'Sarja' was to take them off from that island. This the vessel was prevented from doing, owing to the ice-barrier, and it appears from Baron Toll's papers, afterwards recovered on Bennett Island by one of the two relief expeditions sent in 1903, that he had at first intended to winter on the island, but had afterwards decided to attempt to return to the New Siberian Islands, rather late in the season when the weather was uncertain and the ice not firm. They left Bennett Island on the 26th October/8th November, but never reached the New Siberian Islands and doubtless perished on the way.

Mr. Birulia's notes on the birds observed during the expedition are very long and diffuse, and I have therefore deemed it advisable to give the following abbreviated translation of them:—

Lagopus albus.—The Willow-Grouse appeared to commence nidification about the middle of May, selecting places on the cliffs on the sea-coast where the snow had commenced to thaw earlier than in the interior of the island, both on the western and high northern sides, for many nests were found in the latter district, whereas in the interior, even on the hilly portions of the tundra, neither nests nor the birds themselves were ever seen. For its nest the Willow-Ptarmigan selected some comparatively dry spot well-covered with long grass of the previous year and made an oval-shaped hollow in the turf, in which it placed its eggs without any lining. Two nests, however, which were found on the 2nd/15th June and the 14th/27th June were sparingly lined with a small quantity of *Thamnolia vermicularis* and a few downy feathers of the bird itself. The first of these measured 20 centimetres in length and 18 cm. in width, and the second 23 cm. in length, 18 cm. in width, and from 7 to 10 cm. in depth.

The full number of eggs in a clutch varied from ten to twelve, and the ivory merchants who accompanied Mr. Birulia on the islands told him that they had never found more than twelve eggs in a nest, either on the mainland or the islands, and that the usual number was from eight to ten. All the eggs, however, were not hatched, as in some old nests two unfertile eggs were found together with the shells of the eggs which had been hatched. Nests containing from ten to twelve eggs were found from the 2nd/15th to the 15th/18th June. Owing to the eggs assimilating so well to the dark brown colour of the tundra the nest is difficult to discern.

Lagopus mutus was breeding on the Taimyr, but was not seen on the New Siberian Islands. This was probably *Lagopus rupestris* and not true *Lagopus mutus*.

Colymbus adamsi was not uncommon on the coasts of the Tamyr. It was seen at the first winter-quarters of the expedition on the Western Taimyr, though not so often as *Colymbus septentrionalis*, but was not met with on the New Siberian Islands. This fact was confirmed by the ivory merchants. It nests rarely in the tundra of the Pri-Yansk district, but its real breeding-place is said to be on the lakes and inland waters on the border of the forest-zone. The Tungusian

Stepan Sergeier saw a nest of this Diver near the river Omolai.

Colymbus septentrionalis was common on the Taimyr, and numbers were nesting there, while it was also met with commonly on New Siberia.

Fulmarus glacialis was only once seen when crossing the Nordensköld Sea.

Uria mandti was observed on two occasions on New Siberia.

Larus glaucus was rare on the Taimyr, but was found breeding on the south coast of Taimyr Island. Mr. Birulia met with it on New Siberia and believes that it breeds there.

Larus affinis (*Larus cachinnans* var. of Birulia).—On the Taimyr this Gull commences nidification soon after its arrival, and the first nest, containing two eggs, was found on the 16th/29th June, 1901. The nesting-place selected is a large flat stone surrounded by the water running from the melted snow and ice, which forms small lakes on the tundra, where they are protected from the arctic fox and wolf. Mr. Birulia saw many nests on his expedition along the south coast of Taimyr Bay. On some larger stones he found two nests, one of which was always an old, half-destroyed nest, and it would seem that only one pair of Gulls makes use of the same stone.

The nest of this Gull is constructed as follows:—Firstly, a layer of moss is placed on the stone and then come layers of moss and reindeer-hair mixed with wing-feathers of Geese, the feather portion of these quills being inside and the stem of the quills outside the walls of the nest. From this mode of construction, the appearance of the structure was not very elegant owing to the protruding shafts of the quills, but the nests were so firmly built that they could be taken off the stone uninjured. They were warmly lined with down. The eggs varied from two to three in number, and were olivaceous in colour with dark spots. *Larus affinis* also nests in larger numbers on the small islets in the lakes of the Taimyr, in company with two other species of Gulls. On the south coast Mr. Birulia found a moderate-sized lake and rather far from the shore was a small rocky island covered with Gulls' nests, where he saw *Larus affinis*, *Larus glaucus*, and *Larus vegæ*.

Larus vegæ was common on the islands of the New Siberian Archipelago, and apparently also on the coasts of the mainland, in the estuaries of the rivers from the Indigirka to the Yana and Omolai. On the New Siberian Islands in Nerpitchi Bay, Birulia saw old and young birds late in the autumn of 1901, and on New Siberia during the entire summer, while he had ample opportunities of observing this Gull, where it was first seen on the 24th May/6th June. As soon as the steep, sandy river-banks were free from snow *Larus vegæ* commenced nidification. He did not find any nests, but from the early part of June at the estuaries of all the small rivers he saw these Gulls, which, when approached, exhibited the greatest anxiety and evidently had nests in the vicinity. In the autumn he saw families of old and young birds. In 1903 Mr. Brousneff found nests of this Gull, containing eggs on the 10th/23rd June, on sandbanks near Cape Rojin. *Larus vegæ* does not, however, nest on the sea-shore exclusively, as on the 17th June/2nd July Mr. Birulia shot a male, which had incubation-patches, far from the sea in the interior of the Island of New Siberia, and saw several pairs, which led him to believe that they had nests there, apparently on small elevated places which were not flooded in the spring. On the whole, he did not meet with this Gull very often, though in 1902 it was more numerous than *Larus glaucus*. It was last seen on New Siberia Island on the 8th/21st September, when it was so cold that the thermometer shewed 20° Centigrade of frost, but in the previous year both old and young birds were observed in Nerpitchi Bay.

Rissa tridactyla was rare, and of accidental occurrence only, off the coasts of the Taimyr mainland, but large numbers were seen off the north coast of New Siberia and Bennett Island.

Rhodostethia rosea.—On approaching Bennett Island on the 29th Aug./11th Sept., 1901, the 'Sarja' encountered large numbers of birds, chiefly flocks of *Rissa tridactyla* and *Rhodostethia rosea*, the latter being almost exclusively young, in consequence of which Mr. Birulia believed that they must have bred on Bennett Island. This Gull was not seen near the islands of the New Siberian Archipelago in the summer, but in the autumn, after the nesting-season, large numbers of old and young birds appeared in flocks keeping to the boundary of the floating ice. In 1902 Mr. Birulia saw the first young bird on New Siberia on the 3rd/16th August and the first flock of old birds on the 23rd Aug./5th Sept. Larger flocks were seen in the Straits of Blagovestchensk on the 29th Aug./11th Sept., where they were very shy and wary; a fortnight later large numbers of Rosy Gulls were seen on New Siberia, and the last were met with near Cape Rojin on the 7th/20th September.

Pagophila eburnea was not common on the north coasts of the mainland of Siberia and was only seen on four or five occasions late in the autumn after the first frosts had set in. Two adults and one young bird were first seen in the Bay of Kolomeitseff, near the Western Taimyr, on the 8th/21st September, and on the 26th Sept./9th Oct. a single bird approached the 'Sarja.' None were seen during the next summer until the 13th/26th August, and in 1901, as the vessel was passing along the north coast of the East Taimyr, one was observed on the 20th of August, old style. In 1902 an old bird was first seen on the Island of New Siberia on the 26th Aug./8th Sept., and two or three days later a pair approached Mr. Birulia's hut, on each occasion a young and an old bird. The old birds were wary, but the young were very inquisitive, and both of them were shot. They had the rings round the eyes and the legs black. It would seem, therefore, that this Gull breeds on one of the islands of the De Long Group, north of the New Siberian Archipelago.

Tringa minuta.—In 1900 large numbers of Little Stints were seen during the passage from the Yugorski Shar to Middendorff Bay, and during the summer on the Western Taimyr near the roadstead Sarja. Mr. Birulia found the first nest, containing much incubated eggs, on the 22nd June/5th July, 1901. From the 24th July/6th Aug. to the 8th/21st August flocks of Little Stints, together with Curlew-Sandpipers in immature plumage, were often seen. On the Island of New Siberia he saw no Stints either of the present species or *Tringa subminuta*.

Tringa maculata.—An example was shot by Mr. Birulia out of a flock on 12th/25th August, 1900, near a pool on an island in the Bay of Minin, but this Sandpiper was not seen again during the expedition.

Tringa striata was common and found breeding on the Taimyr Peninsula, while a Sandpiper was seen on one occasion on New Siberia in 1902 which was either of the present species or possibly *Tringa couesi*.

Phalaropus fulicarius was one of the commonest birds on the coasts of Northern Siberia. It was met with on the passage from the Western Taimyr to the New Siberian Islands, not only on the shores of the mainland and islands, but in the open sea on passage south from some unknown islands in the north. It was first seen in the Bay of Minin on 12th/25th August, 1900, and many flocks composed of young birds only were seen in the Bay of Middendorff. On the Western Taimyr they were first seen on the 25th May/7th June, 1901, along with other Waders, and they were common near pools and small lakes in the tundra, though evidently they do not breed there. Mr. Birulia saw flocks of young birds on the 30th July/13th Aug., and thinks that their breeding-place cannot have been very far distant. On New Siberia the first were seen on the 28th May/10th June and the last on the 1st/14th September.

Tringa subarquata was first seen on the 24th Aug./6th Sept. in small flocks on the shore of small bays in the Gulf of Middendorff, but was not at all common. In 1901 at the Sarja roadstead on the Taimyr coast it was the commonest Wader on the tundra. In my translation of Dr. Walter's notes I gave particulars of its nest and eggs, and in addition to these notes Mr. Birulia says that for the site of their nests they select the southern slopes of the hilly tundra where the snow first melts and there form almost nesting-colonies, as the nests are tolerably close to each other, in most cases only a few steps apart, and even closer if those of the previous year are included. They are mere depressions in the moss in places where the moss or grass from the previous year is most abundant, and not unfrequently an old nest is made use of. Both the male and female incubate. On the south coast of Taimyr Bay, where Mr. Birulia was in July 1901, the Curlew-Sandpiper was much rarer. He did not see any on New Siberia, but Curlew-Sandpipers were met with on other islands of the Archipelago.

[To be continued.]

XXIII.—*Proceedings at the Annual General Meeting of the British Ornithologists' Union,* 1908.

The Annual General Meeting of the British Ornithologists' Union for this year was held at the house of the Zoological Society of London, 3 Hanover Square (by permission), on May 20th. The Chair was taken by the President, F. DuCane Godman, Esq., D.C.L., F.R.S.

The Minutes of the last Annual General Meeting were read and confirmed.

The Report of the Committee announced the continued prosperity of the Union during the past year as regards both its membership and its finances.

The volume of 'The Ibis' for 1907 was the first of the Ninth Series, under the joint Editorship of Dr. P. L. Sclater, D.Sc., F.R.S., and Mr. A. H. Evans, M.A. It contained 685 pages and was illustrated by 10 coloured plates, 3 maps, and 34 text-figures.

With regret the Committee reported the deaths of the following Members of the Union since the last Annual General Meeting:—

F. C. Crawford, Prof. A. Newton, T. M. Pike, Howard Saunders, Earl Sondes, and C. A. Wright.

Dr. Charles Hose, Mr. A. H. Smith, and Major C. L. Williams had resigned, and Messrs. F. H. Bulkeley-Johnson and R. C. Wood had had their elections cancelled at their request.

At the date of the Meeting the Union consisted of 414 Ordinary Members, 2 Extra-Ordinary, 10 Honorary, 6 Colonial, and 19 Foreign Members.

The Committee proposed that, in consequence of the death of Prof. Newton, the Jubilee Meeting in 1908 should take place in London, instead of Cambridge, about the second week in December. This was agreed to.

On the motion of Dr. Sclater, seconded by Dr. Hartert, it was then resolved: "That the following Members be requested to act on a Joint Committee along with the Ordinary Committee to make the necessary arrangements for the Jubilee Meeting in December next:—Messrs. Edward Bidwell, H. E. Dresser, and E. G. B. Meade-Waldo, the Hon. Walter Rothschild, Mr. D. Seth-Smith, and Dr. R. Bowdler Sharpe."

The Statement of Accounts for the year ending December 31st, 1907, was submitted and approved, and a vote of thanks was accorded to Mr. W. R. Ogilvie-Grant, the Auditor.

Mr. Henry Munt and Dr. F. G. Penrose having been appointed Scrutineers to superintend the ballot, the Meeting proceeded to elect the Officers for the ensuing year, and it was announced that Dr. F. DuCane Godman, F.R.S., had been re-elected President, and Mr. J. Lewis Bonhote, M.A., F.L.S., Secretary; also that Mr. W. R. Ogilvie-Grant had been elected a Member of the Committee in the place of Mr. H. E. Dresser, who had retired by seniority.

The following 25 gentlemen were elected Ordinary Members of the Union:—Dr. John W. Ashworth, M.R.C.S., L.R.C.P., F.R.G.S., F.G.S., Thorne Bank, Heaton Moor, near Stockport; Crispin A. Ball (Soudan Civil Service), Dueim, Soudan; Walter I. Beaumont, F.Z.S., 1 Osborne Place, Plymouth; Clifford D. Borrer, 6 Durham Place, Chelsea, S.W.; Edward J. Brook, Hoddam Castle, Ecclefechan, N.B.; Percy F. Bunyard, F.Z.S., 57 Kidderminster

Road, Croydon; Thomas Carter, Wensleydale, Broome Hill (Great Southern Railway), West Australia; Robert Cheesman, Bakers' Cross, Cranbrook; Claude G. Davies, Cape Mounted Riflemen, Flagstaff, Pondoland; Capt. Edward S. Godman (2nd Dorset Regiment), Muntham, Horsham; Gerard H. Gurney, F.Z.S., F.E.S., Keswick Hall, Norwich; Ralph S. Keep, F.R.H.S., Oakhill, East Budleigh, Devon; Sydney H. Long, M.D., 37 St. Giles Street, Norwich; Charles H. Lyell, M.P., 48 Eaton Place, S.W.; Stuart Maples, Kingsbury, Stevenage, Herts; Richard O. Mathews, Langley Mount, Watford; A. R. Momber, La Junia, San Remo, Italy; Edward R. Paton, Brookdale, Grassendale, near Liverpool; W. J. Percy Player, The Quarr, Clydach, Glamorganshire; Norman F. Richardson, "Lynndale," Manor Road, Forest Hill, S.E.; Sir Henry B. Robertson, Palé, Corwen, N. Wales; Capt. John W. H. Seppings (Army Pay Dept.), 12 Roseneath Villas, Military Road, Cork, Ireland; Frederic W. Smalley, Challan Hall, Silverdale, near Carnforth, Lancs; Matthew Vaughan, Haileybury College, Herts; Gwynne Witherington, Sonning, Berks.

Messrs. J. H. J. Farquhar, Assistant Conservator of Forests, Southern Nigeria, and Robert Hall, F.L.S., C.M.Z.S., Curator of the Tasmanian Museum, Hobart Town, Tasmania, were elected Colonial Members, and Charles W. Richmond, Smithsonian Institution, Washington, was elected a Foreign Member.

A Donation of Ten Guineas was ordered to be made to the Fund being raised for the children of the late G. A. Doubleday, Editors' Assistant.

It was agreed that the President and Secretary on behalf of the Union should sign a Petition to the House of Lords in favour of the "Bill to Prohibit the Importation of the Plumage and Skins of Wild Birds."

A vote of thanks to the Zoological Society for the use of their rooms during the past year was unanimously passed.

Mr. Witherby then proposed and Mr. Bickerton seconded the following new rule:—

"That on satisfactory evidence being furnished to the

Committee that any Member of the Union has taken or caused to be taken, or killed or caused to be killed, or purchased, knowing it to have been taken or killed in the British Islands, any egg or bird as detailed below, the Secretary of the Union shall be directed to remove the said Member's name from the list of Members, and to inform the said Member of the fact in writing. Further that no Member removed under this law shall be allowed to stand as a Candidate for re-election within the space of five years, and that should such Member be proposed as a Candidate after this lapse of time, then it shall be clearly pointed out in the list of Candidates that such Candidate had been removed under this law.

"The prohibition shall refer to the eggs of any of the species named in either of the following lists, and in the case of birds it shall refer at all times of the year to those in list A, but only in the breeding-season to those in list B.

"A.—Bearded Tit (*Panurus biarmicus*), Golden Oriole (*Oriolus galbula*), Hoopoe (*Upupa epops*), Marsh-Harrier (*Circus æruginosus*), Hen-Harrier (*C. cyaneus*), Montagu's Harrier (*C. cineraceus*), Common Buzzard (*Buteo vulgaris*), Golden Eagle (*Aquila chrysaëtus*), White-tailed Eagle (*Haliaëtus albicilla*), Kite (*Milvus ictinus*), Peregrine Falcon (*Falco peregrinus*), Hobby (*F. subbuteo*), Osprey (*Pandion haliaëtus*), Common Bittern (*Botaurus stellaris*), Spoonbill (*Platalea leucorodia*), Kentish Plover (*Ægialitis cantiana*), and Avocet (*Recurvirostra avocetta*).

"B.—Crested Tit (*Parus cristatus*), Snow-Bunting (*Plectrophenax nivalis*), Grey Lag Goose (*Anser cinereus*), Dotterel (*Eudromias morinellus*), Red-necked Phalarope (*Phalaropus hyperboreus*), Ruff (*Machetes pugnax*), Whimbrel (*Numenius phæopus*), Black Tern (*Hydrochelidon nigra*), Sandwich Tern (*Sterna cantiaca*), Roseate Tern (*S. dougalli*), Great Skua (*Megalestris catarrhactes*), Black-throated

> Diver (*Colymbus arcticus*), and Red-throated Diver (*C. septentrionalis*)."

After a discussion the following amendment was proposed by Dr. Sclater and seconded by Mr. Bidwell :—

> "That the subject be referred to the Committee of the Union to report on at the next Meeting."

On the understanding that "the next Meeting" should be the Special Meeting to be held in the autumn and that the matter should not be held over for a year, the amendment was put first and carried.

After a vote of thanks to the Chairman the Meeting was adjourned.

XXIV.—*Notices of recent Ornithological Publications.*

[Continued from p. 384.]

56. *Allen on 'Pennant's Indian Zoology.'*

[Pennant's Indian Zoology. By J. A. Allen. Bull. Am. Mus. N. H. vol. xxiv. pp. 111–116 (1908).]

Dr. Allen has found in the library of the New York Academy of Sciences (now on deposit at the American Museum of Natural History) a copy of the rare first edition of Pennant's 'Indian Zoology' (1769), and gives us a complete account of the various editions of this and the allied work, Forster's 'Indische Zoologie' (1781), which will be acceptable to those who study nomenclature. It has an important bearing, we are told, on the names of a number of species which "here for the first time received technical designations." There is also a copy of this book in the British Museum, concerning which the late Professor Newton gave much information in 1879 ('Stray Feathers,' viii. p. 414). The main point seems to be that, as shown by Dr. Allen (*op. cit.* p. 114), many of the names usually accredited to Forster (1783) were really first published by Pennant (1769). It should also be noted that the generic term "*Otus*," usually attributed to Cuvier (1800), appears to have been previously used by Pennant in 1769*.

The second edition of the 'Indian Zoology' is not so scarce. There is a copy of it at the Zoological Society and another in Sclater's library.

57. *Bangs on Birds from Western Costa Rica.*

[(1) On a Collection of Birds from Western Costa Rica. By Outram Bangs. The Auk, xxiv. No. 3, 1907.

(2) On certain Costa Rican Birds. By Outram Bangs. Proc New Engl. Zool. Club, iv. p. 23 (1908).]

In the first paper we have an account of a large collection of bird-skins, numbering nearly 6000, made in western Costa Rica by a well-known taxidermist, Mr. Underwood, for Mr. Bangs, in the spring and summer of 1906. Mr. G. K. Cherrie, of the National Museum of Costa Rica, had previously made a collection in the same district in 1891–2, and had published a paper on it; but Mr. Bangs thought there was more to be done there, and he was apparently right. The following seven new species and subspecies are described by Mr. Bangs from specimens procured on this trip by Underwood—*Micrastur interstes*, *Gymnocichla nudiceps*, *Synallaxis albescens latitabunda*, *Dendrocolaptes sancti-thomæ hesperius*, *Leptopogon pileatus faustus*, *Cyanerpes lucidus isthmicus*, and *Buarremon costaricensis*. One "overlooked, but well-marked subspecies" (*Glaucis hirsuta ænea*) is re-instated; and 12 other known birds are recorded as new to the Costa-Rican Avifauna.

Mr. Bangs fears that the extensive clearing of the forests in this part of Costa Rica for new banana-plantations which is now going on will sadly interfere with the native birds. But under these circumstances should he not place a little restraint on the ardour of his collector, who in some cases, it appears, has brought home such series as 92, 91, 89, and 68 specimens of the same species?

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* Some of our "ultra-prioritarians" will, no doubt, propose that *Otus* of Pennant, Ind. Zool. (1769), should supersede *Scops* of Savigny as the generic name of the Eared Owls; but as this change would cause great confusion, we trust that it will not be insisted upon. It will be observed that Pennant gave no sort of description or definition of his name, but merely used it in conjunction with the specific term "*bakkamena*," which is itself quite a doubtful title, although it has been applied by Blanford and others to a well-known Indian species.

In the second paper Mr. Bangs gives further notes on Costa Rican birds received, for the most part, from the same quarter, and describes as new forms:—*Coccyzus americanus occidentalis*, *Trogon underwoodi*, *Pachyrhamphus versicolor costaricensis*, *Myiobius xanthopygus aureatus*, *Troglodytes ochraceus ligea*, *Myioborus aurantiacus acceptus*, *Phlogothraupis sanguinolenta aprica*, and *Emberizoides sphenura lucaris*.

58. *Bertoni on the Birds of Paraguay.*

[Segunda contrabución à la Ornitologia Paraguaya. Nuevas especies Paraguayas. A. de Winkelried Bertoni. (Revista del Inst. Paraguayo. Asuncion, 1907).]

We have received a copy of M. Bertoni's second contribution to the Ornithology of Paraguay. It gives the names of 45 species to be added to the List of the birds of that country, and short notes on each of them. They are mostly well-known species, and none are described as new.

59. *Bonhote's 'Birds of Britain.'*

[Birds of Britain. By J. Lewis Bonhote, M.A., F.L.S., F.Z.S., Member of the British Ornithologists' Union. With 100 illustrations in colour, selected by H. E. Dresser from his 'Birds of Europe.' London: Adam and Charles Black. 1907. 1 vol. 8vo, 405 pp. Price 20*s.*]

The increase of late years in the number of publications relating to the Birds of the British Islands renders it evident that there is still room for a popular handbook on British Birds, and this want Mr. Bonhote has endeavoured to supply. He has called to his assistance in this matter Mr. Dresser, our well-known authority on the Birds of the Palæarctic Region, who has kindly responded by permitting Mr. Bonhote to copy the illustrations prepared by Keulemans for the 'Birds of Europe.' This has added much to the value of the present volume, and at the same time has enabled it to be supplied at a moderate cost.

Mr. Bonhote has wisely avoided all discussions about arrangement and nomenclature by adopting those of Saunders's 'Manual' and of the 'List of British Birds' of the B.O.U. Whether he was right in determining to include in his book every species that has been known to occur in Great Britain is a little doubtful. It is a great nuisance to carry about a heavy handbook, and probably at least a hundred pages of the present volume would have been saved by ejecting all the species that are merely "waifs and strays," or by relegating them to an appendix in which little more than the names would be given. Persons who use this handbook would very seldom come across the rarer accidental visitors, and, if they did, might well be referred to Saunders's 'Manual' for information about them. In a popular work they seem to us to be a little out of place, though where scientific accuracy is exacted they should, no doubt, come in. Indeed we know that the inclusion of such very scarce visitors as the Griffon Vulture and the Blue-winged Teal in the British List is apt to raise a laugh among the unlearned.

Mr. Bonhote's field-notes about the birds are well-written and generally correct, and give the principal facts required to be known concerning them in easy language. We think, however, that in some cases the general geographical distribution should have been more clearly indicated. It is of great interest even to those who confine their attention entirely to "British" species to know where they occur outside the British area. Not a word, for example, is said about the area occupied by the Robin on the Continent, nor is the curious fact of its semi-migration alluded to.

The one hundred plates, as we have already said, are a very attractive part of Mr. Bonhote's volume, though in some instances they are rather highly coloured, particularly in the case of the brightly coloured species.

60. *'British Birds,'* Vol. I.

[British Birds, an Illustrated Magazine devoted to the Birds on the British List. Witherby & Co. Nos. 1 to 12, completing vol. i., 1907–8.]

In a former number (above, p. 202) we have called attention to the institution of this new periodical, and now have to record the completion of the first annual volume. 'British Birds' appears to have become a great success, and we hear favourable reports of it on every side. The articles on recent additions to our knowledge of the Birds of the British List have been very useful, and we hope that they may be continued to the end of the subject. Mr. Selous's notes on the nesting-habits of rare birds are most instructive, as is also Dr. Hartert's explanation of the 21 forms which he considers to be more or less strictly peculiar to the British Islands.

The discovery of the lower half of a tibia of the Great Auk in the Orkneys, though not unexpected, is of much interest.

Besides the regular twelve numbers we have received a "special photographic number" of 'British Birds' in seven chapters. It contains 32 plates illustrative of the "home-life of Marsh-birds," photographed and described by Miss Turner and Mr. P. H. Bahr, and will, we are sure, be much appreciated by all Ornithologists.

61. *Crawshay's 'Birds of Tierra del Fuego.'*

[The Birds of Tierra del Fuego. By Richard Crawshay, Captain, Reserve of Officers; late Inniskilling Dragoons. London: Bernard Quaritch, 1907. 1 vol. 4to.]

This is a nicely got-up work—print, paper, and illustrations all excellent—and does credit to the author and publisher alike. Captain Crawshay, well known to many of us through his long and various experiences in Africa, "sighing for pastures new," went off to the extreme south of the New World "to explore Patagonia." Arriving at Punta Arenas in August 1904, he found the country "weather-bound and impassable," and, not feeling reconciled to two months' idleness, accepted a welcome alternative offered to him of seeing something of Tierra del Fuego "under exceptional facilities generously afforded."

After an interesting and well-written preface, in which the climate, geography, geology, zoology, botany, and other general features of Fuegia are lightly depicted, Capt. Crawshay proceeds at once to his main subject—THE BIRDS, to which he had resolved to pay special attention. He does not claim to have inserted in his account of them absolutely all the species that have been registered as met with in Tierra del Fuego, but gives us some good notes on the 79 species of which he has himself obtained specimens or has identified without doubt in life. Needless to say, there are no novelties among them. They are all well-known South-American species that are met with in Patagonia on the east or in Chili on the west, or, still more frequently, are found in both of these countries. The nearest Avifauna to that of Fuegia which has been recently worked up is that of Argentina, of which Sclater and Hudson's 'Argentine Ornithology' gives us a modern account. The greater number of Fuegian species are likewise met with in Argentina, and the work above quoted is constantly referred to by Capt. Crawshay.

The rarest bird in Capt. Crawshay's List is, without doubt, the beautiful little Shore-Plover, *Pluvianellus sociabilis*, of which an excellent figure is given. All Keulemans's 21 plates are, in fact, very good, and are a great ornament to the work. There are besides more than 20 views of the characteristic scenery of Tierra del Fuego, and, we are pleased to add, a map of the island, without which no work on the zoology of a special country should be deemed complete.

We copy Capt. Crawshay's field-notes on the rare *Pluvianellus sociabilis*:—"This Plover is not a common bird. In six months I saw five pairs, at various times, in various places. Once I remarked a pair high up on the shingle in San Sebastian Bay, in close proximity to a freshwater lagoon inland. In all other cases I found these birds frequenting inland lagoons, with bare shores, where the water is pink with the minute crustacea on which they feed. At Black-necked Swan Lagoon, when chasing young Geese on horseback in February, I came across a pair with one young bird, which last proved so active that it escaped me and concealed itself in the rocks. So exactly do these birds assimilate the grey-coloured earth and pink water of their feeding-grounds, that it is most difficult to distinguish them, even at very close range, when they are at rest; it is then their shadow, rather than their actual form, which reveals their presence in the clear, soft sunlight of these high latitudes. They run about at a great pace, seeming quite to flit over the ground. The flight is dashing, headlong, and twisting—difficult to follow with the eye—and usually they negotiate a considerable distance before alighting again."

62. *Godman's 'Monograph of the Petrels.'*

[A Monograph of the Petrels (Order Tubinares). By F. Du Cane Godman, D.C.L., F.R.S., President of the British Ornithologists' Union. With hand-coloured Plates by J. G. Keulemans. Part II. March 1908. Witherby & Co.]

In our notice of the first part of this important work (above, p. 367) we have fully explained its aims and objects. We need now only say that the second part fully deserves the same commendation as the first. After finishing the account of the Storm-Petrels with the little-known *Cymodroma mæstissima*, the author devotes his attention to the Shearwaters (*Puffini*), of which he recognizes 25 species. All but 5 of these are well figured in Keulemans's excellent plates, which will be of great assistance to Ornithologists who have to determine specimens of this difficult group. Two of them, *Puffinus gravis* (olim *major*) and *P. anglorum*, are well-known members of our Fauna, and two others (*P. griseus* and *P. obscurus*) are occasional stragglers into the British Area. But it seems that *P. yelkouanus* (the Mediterranean representative of *P. anglorum*) should also be included in the British List, as several undoubted examples of it have occurred on our southern and eastern coasts *.

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* *Cf.* Salvin, Cat. B. xxv. p. 380.

63. *Haagner and Ivy on South-African Bird-life.*

[Sketches of South-African Bird-life. By Alwin Haagner and Robert H. Ivy. Illustrated by the Camera. London: R. H. Porter, 1908. 8vo. 182 pp.]

A semi-popular book on the birds of South Africa was much wanted, and here we have it. One author supplies the text and the other the photographic illustrations, of which 121 are given in the volume. They are not all of equal merit, but many are excellent, and when the difficulties to be surmounted in obtaining photographs of this kind are considered it will be allowed that Mr. Ivy has done some very good work.

The letterpress is not arranged in systematic order, but wanders about from one group to another, and from one district to another. Other observers' notes are, of course, occasionally introduced, but, on the whole, the work is based on the personal observations of the two authors, who are both of them well known as energetic field-naturalists. Much original information on the groups of birds characteristic of Africa—such as the Plantain-eaters, Honey-Guides, and Barbets—is given in this volume, and the Wood-Hoopoe (*Irrisor viridis*) is figured at its nest-hole. These "sketches" are well worthy of the careful attention of those who wish to form an idea of South-African Bird-life.

64. *Howard's 'British Warblers.'*

[The British Warblers. A History, with Problems of their Lives. By H. Eliot Howard. London: R. H. Porter, 1908. Pt. 2 (separate pagination), 5 coloured and 5 uncoloured plates. Price 21*s.* net.]

The second part of Mr. Howard's work fully maintains the standard of the first; the letterpress is full of interesting matter, and the illustrations are well-conceived and very life-like. The two coloured plates and five uncoloured photogravures of the Chiffchaff form a delightful series of representations of the bird's attitudes, especially while courting, and shew the plumage of the male, female, and young, which is further described in the text under the heads of the different stages of growth. The habits, food, and distribution are also considered at full length, and the results of the author's observations testify to his careful methods and the acuteness of his vision. He comes to the conclusion that the habits in general are decidedly uniform and seldom modified to an appreciable extent, a condition of affairs which he evidently believes to hold in various species of Passerine birds, if not elsewhere.

Besides the Chiffchaff, the Yellow-browed Warbler is described, but in this case no mention is made of its habits: a coloured plate is given of this species and others of the immature Sedge and Grasshopper Warblers, while maps are added of the geographical distribution in summer and winter of the Sedge and Aquatic Warblers.

Under the head of distribution of the Chiffchaff, Mr. Howard might have added that the bird is fairly common in parts of West Ross-shire, and that a form—which he would probably consider distinct—is well known in the Canary Islands.

65. *Journal of the Museums of the Federated Malay States.*

[Journal of the Federated Malay States Museums. Vol. III. Taiping and Kuala Lumpur, February 1908.]

In our last number (above, p. 376) we gave an account of the remarkable discoveries in Birds made by the Gunong Tahan Expedition, extracted from a separate copy of Mr. Ogilvie-Grant's article on the subject. We have now received a complete copy of the Report, which, besides the special articles on the Mammals, Birds, Fishes, &c., contains an interesting narrative of the adventures of the expedition, which left Taiping and Kuala Lumpur in May 1905 under the command of Mr. L. Wray and Mr. H. C. Robinson for the exploration of this celebrated mountain. Gunong Tahan lies on the northern border of Pahang, where it rises to a height of about 7200 feet above the sea-level. Although several vigorous attempts had been made, no previous explorers had succeeded in reaching the summit, which was attained by Mr. Robinson (Mr. Wray having been compelled to retire from the expedition by ill-health) on July 16th. We have described the principal features of the Bird-life of the Gunong Tahan district in our former notice. Birds are said to have been very scarce as individuals up to about 3000 feet, though numerous as species, while above that limit the contrary was the case. Near the summit only two species, *Suya waterstradti* and *Mesia argentauris*, were met with.

66. '*Journal of the South African Ornithologists' Union.*'

[The Journal of the South African Ornithologists' Union. Edited by Alwin Haagner, assisted by Dr. J. W. E. Gunning and B. C. R. Langford. Vol. iv. No. 1 (April 1908).]

The first part of the fourth volume of our South African contemporary commences with an article by Mr. Haagner on the protective resemblance of South African birds, in which many interesting observations on this subject are chronicled. It is illustrated by two photogravures, but we must say that it is somewhat difficult to detect the birds and their eggs in these pictures. Mr. Haagner remarks that "the eggs of the majority of birds laid in the open air are tinted with shades which harmonize with the surroundings of the eggs, a provision of Nature most valuable for the continued existence of the species." Other articles are by Lieut. Littledale and Mr. Gilfillan. Mr. Millar describes the remarkable habit of a Kingfisher (*Halcyon chelicuti*) which breeds in trees in the nesting-holes of Barbets and Woodpeckers. Among the shorter notes is some further information from Mr. Haagner on his newly discovered *Cinnyris olivaceus daviesi* (Bull. B. O. C. xxi. p. 11), of which a coloured figure is given.

67. *King Carlos on the Birds of Portugal.*

[Catalogo Illustrado das Aves de Portugal (sedentarias, de arribacão e accidentaes) por D. Carlos de Bragança. Fasc. i. (1903) e ii. (1907). Lisboa.]

We have a well-known crowned head in our List of Members who is an experienced Ornithologist, but have only lately become aware that another European Sovereign was a great lover of Birds and was engaged upon an illustrated work on the Avifauna of the country over which he ruled. This was the unfortunate King Carlos of Portugal, who has recently met his death by the hand of an assassin.

King Carlos, we have been informed, was an ardent student of Bird-life and had long contemplated a book on the birds of Portugal, but the cares of an unruly State interfered with its progress. In 1903, however, he succeeded in bringing out the first fascicule of his work, and in 1907 a second. Of these there is a copy in the Library of the Royal Geographical Society, as lately mentioned by Sir Clement Markham in the 'Geographical Journal'*.

The 'Catalogo Illustrado das Aves de Portugal' consists of a series of well-drawn coloured plates, with accompanying letterpress in Portuguese and French. The letterpress is short, containing merely the name of each bird, a few synonyms, its vernacular names in Portuguese, French, Spanish, English, and Italian, a short explanation as to the mode of its occurrence in Portugal, and an account of the specimens examined. The figures of the birds are well drawn, but the colouring is in some cases rather too lively. The paper and print leave nothing to be desired. The size is a large quarto. The King has wisely followed Dresser's 'Birds of Europe' in nomenclature and arrangement. The first fascicule contains plates 1–20, and the second plates 20–40.

We trust that steps will be taken to ensure the completion of this important work, there being no book on the birds of Portugal in existence.

68. *Müller on the Air-sacs of the Pigeon.*

[Smithsonian Miscellaneous Collections. Vol. iv. part 3, 1907.]

Mr. Bruno Müller, under this title, has published a long and important memoir on a subject which bristles with difficulties and is by no means yet exhausted. His investigations were carried out in the Zoological Laboratory of the German University at Prague, the author being assisted to prosecute his researches out of the Hodgkins Fund of the Smithsonian Institution.

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* See "Oceanographic Researches of His late Majesty King Carlos of Portugal." By Sir Clements R. Markham, K.C.B., F.R.S. Geogr. Journ. xxxi. No. 5 (May 1908).

Without doubt this is the most complete account of the air-sacs of birds which has yet been written, and it is illustrated by some really beautiful figures representing the author's dissections. The study of these air-chambers is one of quite exceptional difficulty, and the author must be congratulated on the marvellous success which he has achieved.

Although he has carefully studied the literature of his subject, and does ample justice to the pioneers in this branch of avian anatomy, Mr. Müller has omitted reference to one or two comparatively recent memoirs, which is the more to be regretted because his opinion thereon would have been valuable.

This paper is much too long to make a detailed account thereof possible, but reference may fittingly be made to his criticisms of the surmises of other investigators as to the function of these remarkable receptacles, and to his own conclusions as to their purpose.

Of recent theories as to the function of these air-chambers, that which supposes them to serve in part as regulators of temperature, and in part, and chiefly, as accessory respiratory organs, finds most general acceptance at the present day. In avian respiration, in short, it is generally believed that the air is drawn swiftly through the lungs into the air-sacs, from which it is slowly forced back into the lung-capillaries. To this view the author objects, contending that the air forced from the air-sacs into the lungs would, after losing a portion of its oxygen, pass back again into the sacs. But this is a pure assumption, unsupported by any facts whatsoever. Rather, the heavier deoxygenated air would be driven forward through the lung to the trachea by the pressure of the lighter newly-inspired oxygenated air which would rush in to occupy the place of the air as it is expelled from these chambers.

That these sacs also serve a mechanical part is also highly probable, but their importance in the work of respiration has surely been greatly underrated.

69. *Nicoll's 'Three Voyages of a Naturalist.'*

[Three Voyages of a Naturalist, being an Account of many little-known Islands in Three Oceans visited by the 'Valhalla,' R.Y.S. By M. J. Nicoll. With an Introduction by the Rt. Hon. The Earl of Crawford, K.T., F.R.S. 1 vol. Witherby & Co., 1908.]

Our readers will remember that Mr. Nicoll furnished an account to this Journal in 1904 and the two following years of the birds seen or obtained during three voyages with Lord Crawford in the 'Valhalla,' R.Y.S., wherein he described several new forms and gave full details of the habits of many others. In the present volume is contained a well-written and most interesting description of his travels as a whole, illustrated by many plates, maps, and text-figures. We wish to draw special attention to the value of our fellow-member's investigations, as they constitute an up-to-date report of the present condition of the bird-life of the localities visited, from which we are not only able to judge of the comparative abundance or scarcity of the various forms, but also to obtain some idea of the chance of survival of those that are especially rare or local. Many of the places are extremely difficult of access, while some have seldom been visited, and can hardly be said to have been worked by a naturalist.

The first voyage, begun in 1902, was continued round the world, visits being paid to St. Paul's Rocks, Fernando de Noronha, Bahia, Monte Video, the Straits of Magellan and Smythe's Channel, Valparaiso, Easter Island, Pitcairn Island, Tahiti, Samoa, Fiji, and Thursday Island. Many interesting birds were obtained (such as *Elainea ridleyana* and *Vireo gracilirostris* of Fernando de Noronha), and a series of skins was secured of the Pitcairn Warbler (*Tatare vaughani*), of which the British Museum possessed only spirit-specimens. Easter Island, with its carvings, paintings, and idols, was perhaps the most important locality touched at by the 'Valhalla,' apart from ornithological considerations. It appears that there is one indigenous land-bird found there (see p. 202), "like a Reed-Bunting with a red breast," of which, however, no specimen was procured.

The second voyage, for which the start took place in December 1903, was to the West Indies, special attention being paid to Martinique, Grand Cayman, and Little Cayman. Three new forms were obtained on this occasion—*Dendrœca crawfordi* on Little Cayman, *Vireo lauræ* on Grenada, and *Pitangus caymanensis* on Grand Cayman.

The third voyage was round Africa, and it was on this occasion that Messrs. Nicoll and Meade-Waldo observed the extraordinary sea-monster with a "long eel-like neck, surmounted by a head shaped somewhat like that of a turtle," which "rose out of the water in front of the fin" (*cf.* P. Z. S. 1906, p. 721). Of this an illustration is given. St. Paul's Rocks and Fernando de Noronha were again visited, and thence the yacht proceeded to Itaparicu I. (Bahia); South Trinidad, Martin Vas, and Tristan da Cunha; Dassen Island; the Comoros; Madagascar; Glorioso, Assumption and Aldabra Islands, and the Seychelles. On this occasion the ornithological results were most gratifying, as new forms of birds were procured on South Trinidad, Tristan da Cunha, Mayotte, Assumption Island, and the Seychelles. Vivid descriptions are given, moreover, of the localities visited, especially in the case of South Trinidad, Dassen Island, and the Forêt d'Ambre in Madagascar.

70. *Reichenow on Oceanic and Antarctic Birds.*

[Deutsche Südpolar-expedition 1901–1903—im Auftrage des Reichsamtes des Innern herausgegeben von Erich von Drygalski, Leiter der Expedition. Sonderabdruck aus Band ix. Zoologie. (1) Vögel des Weltmeeres. Die Meeresvögel der östlichen Erdhälfte, von Anton Reichenow. (2) Uebersicht der Vogelarten des Südpolargebiets und deren Verbreitung, von Anton Reichenow.]

Dr. Reichenow has made two important contributions to the series of volumes on the results of the German South-polar Expedition of 1901–1903. The first relates to the oceanic birds of the eastern hemisphere and the second to the birds of the South Polar Region and their distribution.

In the first essay, after a general sketch of the Sea-birds of the Atlantic and Indian Oceans, and the possible division of the former into several distinguishable districts, the author takes the nine families of birds which he considers oceanic, and discusses their constituent species (144 in all). Of these the Laridæ, Procellariidæ, Alcidæ, Spheniscidæ, Colymbidæ, Phalacrocoracidæ, Sulidæ, and Phaethontidæ may be fairly designated "Vögel des Weltmeeres," but the Ducks (Anatidæ), some of which are included under that title, seem to us to have little claim to it. The Swans (*Cygnus*) especially cannot in any sense be called "oceanic" birds—yet one species is placed in the List.

This article, however, appears to have been compiled mainly for the information and instruction of future oceanic voyagers in order to enable them to determine the birds that they meet with. It will be very useful in this way, but does not contain many references to the specimens which were obtained during the German South-polar Expedition. We note that Dr. Reichenow still maintains the specific distinctness of his *Sterna antistropha* from *S. macrura*, in opposition to Mr. Eagle Clarke's opinion on this question (see 'Ibis,' 1907, p. 653), and gives a coloured sketch of its head and foot (p. 463). We can hardly believe in the existence of two such closely allied species in the same area.

In the second contribution to the Zoology of the German South-polar Expedition Dr. Reichenow discusses the Avifauna. After some good preliminary remarks he gives a list of the species belonging to it — 53 in number, two of which are doubtful. They belong to the families Spheniscidæ (7), Procellariidæ (25), Laridæ (9), Phalacrocoracidæ (3), Anatidæ (3), and Chionididæ (5), besides the single Passerine *Anthus antarcticus* of South Georgia. The species are then taken in the same systematic order, with complete synonymy, and remarks where necessary.

All the previously known localities for each species are given, but the exact specimens procured by the German South-polar Expedition do not appear to be specially mentioned.

The Sheathbill of Marion Island is separated as a new species, under the name *Chionis marionensis*. Dr. Reichenow has *never seen it* (!), but Dr. Sharpe has stated (Cat. B. xxiv. p. 712) that it is smaller than the form of Kerguelen Island and has a "conspicuously smaller bill." That is quite enough, we suppose, in these days!

Four well-drawn plates illustrate scenes of polar bird-life, and there are also many good figures introduced into the letterpress. Dr. Reichenow promises us an essay upon the oceanic birds of the western hemisphere on another occasion.

71. *Salvadori on a new Vulture.*

[T. Salvadori. *Gyps erlangeri*, nov. sp. Bol. Mus. Univers. di Torino, vol. xxiii. no. 576 (25. iii. 08).]

Count Salvadori is of opinion that two species of Vultures have been confounded under the name *Gyps rueppelli*—(1) the true *G. rueppelli*, as figured by Cretzschmar in Rüppell's Atlas under the name *Vultur kolbii*; and (2) the bird described and figured by v. Erlanger in the J. f. O. 1904, p. 144, t. 2, as *Gyps fulvus rüppelli*, which he now proposes to name *Gyps erlangeri*. The former is generally black, with the apical margins of the wing-feathers semilunar and whitish; the latter is more decidedly brown, with the wing-margins larger and less neatly limited, and has the under parts uniformly whitish.

Count Salvadori endeavours to arrange the complicated synonyms of these two nearly allied species under their respective heads, but, as he rightly states, there is much more to be done before this task can be satisfactorily accomplished. For the area of *Gyps rueppelli* he gives Western Abyssinia, the Blue Nile, and Khartoum; for that of *G. erlangeri*, Erythræa, Western Abyssinia, and Somaliland.

But to which form do the specimens referred to *G. rueppelli* by the South African ornithologists belong? The examples brought alive to the Zoological Society's Gardens from Egypt (see P. Z. S. 1896, p. 609) were, we believe, of the typical form. One of them is still living in the Regent's Park.

72. *Salvadori on Birds from Erythræa.*

[Uccelli dell Eritrea raccolti dal Signor Ilario Capomazza, studiati da T. Salvadori. Ann. Mus. Civ. di Stor. Nat. di Genova, ser. 3, vol. iii. 1908.]

This is an account of a collection of Birds made in the Italian Colony of Erythræa (1906–7) by Signor Ilario Capomazza. It contains about 600 specimens, referable to 132 species. There are no actual novelties in it, but attention is called to the occurrence of *Monticola solitarius* (new to Africa), *Phœnicurus rufiventris* (new to Erythræa), and to the total absence of Larks (Alaudidæ). *Sterna albigena*, *Tinnunculus arthuri*, and *Irrisor abyssinicus* are also rarities.

73. *Sassi on some Birds from the Canaries.*

[Einige Bemerkungen zur Ornis der canarischen Inseln. Von Dr. Moritz Sassi, Wien. Orn. Jahrb. 1908, xix. p. 30.]

Not long ago it was held that the birds of the Canaries, with a few exceptions, might be considered identical with European species. The studies of the "new school," however, have already resulted in the separation of many of them as subspecifically distinct. Dr. Sassi now adds two more to the list of Canarian subspecies—namely, *Calandrella minor distincta* (Grand Canary) and *Œdicnemus œdicnemus insularum* (Canaries generally). On the other hand, he is not disposed to allow that the so-called *Emberiza calandra thanneri* and *Sylvia melanocephala leucogastra* are separable from their European representatives. He is also very doubtful as to the alleged existence of two forms of the Canarian Raven (*Corvus corax canariensis*) and two forms of the Canarian Kestrel (*Tinnunculus canariensis*) in different islands of the archipelago.

74. *Schiebel on the Birds of Lesina.*

[Beiträge zur Ornithologie der südalmatischen Insel Lesina (nebst anderen Reisenotizen). Von Dr. G. Schiebel. Orn. Jahrb. 1907, p. 161, et 1908, p. 1.]

In April 1907 Dr. G. Schiebel, of Innsbruck, made an ornithological tour through Croatia, Bosnia, and Herzogovina to the South-Dalmatian Island of Lesina, and remained there for a month collecting birds. He now gives us an interesting narrative of his journey, and remarks on the birds observed during his route, ending with a systematic list, accompanied by field-notes on the species of which examples were collected and observed in Lesina.

Passing through Serajevo Dr. Schiebel did not fail to pay a visit to the well-known ornithologist Herr Reiser and his famous collection of the birds of the Balkan peninsula. Dr. Schiebel's daily journal is given throughout his route and contains many entertaining passages. He also gives a full description of the physical characters of the charming island of Lesina, where he passed the whole month of May.

In Lesina Dr. Schiebel did not amass a large collection—only 75 skins. But he had no taxidermist with him, and was obliged to make his skins with his own hands, which, after the whole day has been passed in the open, must become a tiresome business.

The systematic list, with field-notes and remarks, which occupies the second portion of the author's memoir, enumerates about 60 species as met with in the island of Lesina. They are named and arranged in the same fashion as in Herr Kollibay's memoirs on the birds of Dalmatia and the Bocche di Cattaro, which have been previously noticed in this Journal. The most novel point in the list appears to be the author's theory that *Saxicola aurita* and *S. stapazina* are really only different phases of the same species. On this he descants at length, and gives some evidence in its favour. It is, however, a case for further investigation, and cannot be decided upon the seven specimens of this widely spread form obtained by the author on the little island of Lesina.

75. *Sharpe on the Ornithological Literature of* 1906.

[Zoological Record, Vol. xliii. 1906. XVII. Aves. R. Bowdler Sharpe. 8vo. Pp. 104.]

In our notice of the "Aves" of the Zoological Record last year ('Ibis,' 1907, p. 212) we announced, with much approval, the approaching amalgamation of the 'Zoological Record' (kept up so successfully by the Zoological Society of London for many years) with the zoological portion (N) of the 'Catalogue of Scientific Literature' prepared by the International Council formed for that purpose. We have now before us the section "Aves" of the amalgamated catalogue and are glad to say that the plan of union seems to have been carried out in a thoroughly satisfactory manner. All the virtues of the old 'Zoological Record' have been preserved, and many of the vices which disfigured the zoological volume of the International Council's Catalogue have disappeared.

The record of the 'Aves,' as in many previous years of the 'Zoological Record,' has been compiled by Dr. Bowdler Sharpe, to whom we offer our congratulations on having found time to carry out this very stiff piece of work among all his other multifarious occupations.

The Record of Aves commences with a list of the titles of the ornithological publications of 1906. It is a very long one, occupying about 50 pages of double columns, and seems to be much more extensive and complete than those of former years. The titles are not numbered through, but we estimate them to be at least 1500–1600. When there is more than one paper by the same author the consecutive papers are numbered through, so that it is quite easy to refer to them by the author's name and the number of his paper—e. g. "*Bianchi* 5" means Bianchi's fifth paper in the List of Titles. This mode of reference is short and convenient, and is used all through the "Subject-Index."

The "Subject-Index," although an improvement upon some of those of former years, is still, in our opinion, unnecessarily broken up into small headings.

The third or "Systematic" division, which concludes the work and is of great importance to the working ornithologist, seems to be very full and complete. The new genera and species and other discoveries in each family are arranged in systematic order according to the new 'Hand-list,' and are referred to by the author's name and the number of his paper in the list of titles, and short explanatory notes are added where they are required. We may remark that the correct name of the "Order" of the American Vultures should be written "Cathartiformes" not Cathartidiformes, as the genitive of *καθαρτὴς* is *καθαρτοῦ not καθαρτίδος*.

76. *Thomas on the Ceylonese Jungle-fowl.*

[Hybridization Experiments with the Ceylon Jungle-fowl. By J. Llewellyn Thomas, F.R.C.S. Spolia Zeylanica, iv. pp. 19, 158 (1907).]

Mr. Thomas and his friends in Ceylon have been making experiments in breeding hybrids between the Jungle-fowl of Ceylon (*Gallus stanleyi*) and the domestic fowl, usually held to have descended from *G. bankiva*, and matching the hybrids in various ways. These experiments are described in the two papers cited above. The following conclusions have been arrived at:—

(1) The hybrids are not sterile when bred *inter se*.

(2) The hybrids are not sterile when matched with the domestic parent (*i. e.* hybrid cock with domestic hen).

(3) There is some indication that the hybrids are not sterile when matched with the Jungle-fowl (*i. e.* Jungle-cock and hybrid hen).

The alleged sterility of these hybrids cannot, therefore, be adduced, as it was by Darwin, as one of the proofs that *Gallus stanleyi* is *not* the parent stock of the domestic fowl.

Further experiments on this interesting subject will, it is hoped, be made.

77. *Van Oort on Birds from New Guinea.*

[Note XVII. On New Guinea Birds. By Dr. E. D. Van Oort. Notes Leyd. Mus. xxix. p. 170 (1907).]

Dr. Van Oort writes on some specimens of birds recently acquired by the Leyden Museum from the zoological collection of the "Utrecht Missionary-Union," and originally obtained in the Arfak district of New Guinea. They are referred to 22 species, among which is the type specimen of *Casuarius papuanus* of Schlegel, an albino example of *Talegallus cuvieri*, and a young Paradise-bird of the genus *Diphyllodes*, probably belonging to an undescribed species. *Macropygia nigrirostris major* is characterized as a new subspecies from New Britain. Figures are given of *Talegallus cuvieri* (albino) and *Ninox dimorpha.*

78. *Van Oort on a new Cassowary.*

[On an apparently new Form of *Casuarius* from the North Coast of New Guinea. By Dr. E. D. Van Oort. Notes Leyd. Mus. xxix. p. 204.]

Under the name *Casuarius casuarius bistriatus* is described an example of this group of Cassowaries originally obtained alive in 1894 on the north coast of New Guinea and presented to the Zoological Garden of Rotterdam. On its death in 1897 it was sent to the Leyden Museum. It is a "very near ally of *C. c. beccarii.*" A coloured figure of the head of this specimen is given.

XXV.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "To the Editors":—

Sirs,—A note published in 'The Ibis' for April last (pp. 388–389) refers to the birds met with by Commander Peary, U.S.N., during his sledge-journey along the northern shores of Grant Land, extending as far to the westward as Axel Heiberg Land, during the summer of 1906. I do not suppose that the eminent explorer claims special proficiency in the study of ornithology, but an examination of his narrative 'Nearest the Pole' shews that little or nothing in the shape of bird-life escaped his observant eye. I think, however, that I shall unquestionably prove that he has given the name of Purple Sandpiper to the Knot (*Tringa canutus*). The Purple Sandpiper (*T. striata*) is of rare occurrence in Smith Sound and to the northward. Bessels records it from Thank God Harbour in 1872, but omits the Knot. Dr. Coppinger, R.N., found Knots frequent in the same locality during July 1876, and met with one brood of five young ones, but did not note the Purple Sandpiper. Mr. Hart records the Knot as a common breeding species in the neighbourhood of Discovery Bay in 1876, but that capable observer did not meet with the Purple Sandpiper, neither did I nor any of my companions, even to the extreme northern limits of Grant Land, in 1875–76. There is, however, a definite record by General Greely, who thus writes of the occurrence of the Purple Sandpiper in Grant Land: "A few specimens were seen and obtained by us in 1882–83." Greely was well acquainted with the Knot, and records that in his opinion at least twenty pairs nested within two miles of his headquarters at Discovery Bay, in 1882–83, so that with him there could have been no confusion between the two species, but undoubtedly the Purple Sandpiper is rare in Grant Land. Thirty years ago I pointed out ('Ibis,' 1877, p. 407) that the Knot was to be met with in considerable numbers as a breeding species in Grant Land, as far as its most northern extension; and this is corroborated by Hart, Coppinger, Greely, and Peary, who under the name of "Purple Sandpiper" extends its breeding-range as far as Axel Heiberg Land. Apparently the bright orange-red hue of the lower parts of the Knot in summer plumage attracted Peary's attention, and he has jotted the bird down as Purple Sandpiper, not meaning by that term *Tringa striata*, but *T. canutus*. I now offer the proofs of this assumption. Peary, shortly after passing Admiral Aldrich's "farthest," along the glacial shores of Grant Land, remarks in his narrative under date 19th of June, "The O-o-o-he, O-o-o-he of the Purple Sandpiper was constantly in our ears." How closely this description of the breeding-note of the Knot agrees with my observations made in the same area and at the same time of the year. "Knots were rather more abundant; their cry reminded me somewhat of the Curlew, *Numenius arquata.* The nearest approach that I can make to describing the note are the words 'tullawee, tullawee, whee, whee,' repeated over and over again; the last two notes are much prolonged and sound very mournfully. When these birds were mating I frequently saw a female pursued in the air by a couple of males at the same time. The Knot has not the power of drumming like the Common Snipe, but after soaring in mid-air with outspread pinions was observed frequently to descend to the ground. During this descent the wings are beaten over the back with such rapid motion that a loud whirring noise is produced, which can be heard at some distance; this action is confined to the males and to the period of courtship." ('Zoologist,' 1877.) Hart remarks: "When courting, Knots play with one another upon the wing, and upon the ground, in a most entertaining manner, pursuing, avoiding, and encouraging one another; while the clear, sweet flute-like whistle of the male is frequently heard." ('Zoologist,' 1880.) I am well acquainted with the Purple Sandpiper, *Tringa striata,* in its breeding-haunts, in various parts, but its note has not the slightest resemblance to that of the Knot as recorded by Hart, Peary, and myself. May I be permitted to add a list of the birds, confining it exclusively to those met with between the 82° and 83° N.L., in the north of Grant Land, which I observed there in 1875–76, which considerably exceeds in number those noted by Commander Peary? Be it remembered, however, that the great Arctic explorer only incidentally refers to the birds he met with during an extended summer journey of exploration, whilst it was my duty to make the fullest and most accurate list attainable. If my list largely exceeds that of Peary, it was due to the unstinted facilities for travel given me by Admiral Sir George Nares, and the co-operation of my brother officers in the British Expedition of 1875–76. We find at least eighteen species of birds reaching the most northern lands of our globe :—

Nyctea scandiaca, breeding.
Plectrophanes nivalis, breeding.
Lagopus rupestris, „
Strepsilas interpres, „
Calidris arenaria, „
Phalaropus fulicarius, apparently breeding.
Tringa canutus, breeding.
Sterna macrura, „
Stercorarius longicaudatus, breeding.
Pagophila eburnea, apparently a straggler.
Larus glaucus, „
Uria grylle, „
Procellaria glacialis, „
Colymbus septentrionalis, „
Harelda glacialis, breeding.
Somateria mollissima, breeding (*fide* Markham and Aldrich).
Somateria spectabilis, „
Bernicla brenta, „

Yours &c.,
May 20th, 1908. H. W. Feilden.

Sirs,—Will you allow me to point out to you that your note (above, p. 201) "On a new Egyptian Bird" is not quite correct? I did not *obtain* an example of *Saxicola melanura*, as you have stated, but *saw* one during the autumnal migration of 1907.

I know this bird well in a wild state, having met with it at Aden. The example in question was sitting on a fence, within a few feet of me, in the Giza Zoological Gardens.

Yours &c.,
Michael J. Nicoll.

10 Charles Road,
St. Leonard's-on-Sea,
30th May, 1908.

Sirs,—Would you allow me to correct an error which I made in my notes on the Ground-Doves of the West Indies, published in the January number of the 'Ibis'?

Under the heading *Chamæpelia jamaicensis* (p. 111) I included birds from St. Thomas Island as referable to this form.

This is certainly, as might have been expected, incorrect, and I have, in fact, since found that specimens from St. Thomas are identical with the Puerto-Rican form *C. portoricensis,* and have the same well-marked crimson base to the bill.

Under the heading of *C. bahamensis* (p. 112) I expressed some doubt as to whether the birds of this form were or were not "wholly and constantly black," as originally described by Mr. Maynard. I had the opportunity of shooting some of these birds in April last, and found that there *is* a distinct crimson cast at the base of the bill similar to specimens from Cuba (*C. axantha*), so that these birds undoubtedly belong to the crimson-billed race, and not to the black-billed form of the Bermudas (*C. bermudiana*). In describing *C. pallescens,* from Mexico, Mr. Ridgway states that the bill is "often (always in fully adult males?) red basally."

I obtained a series of *Chamæpelia* this winter in Mexico, and my experience is that in adult birds of *both* sexes the base of the bill is *invariably* red, or rather crimson.

Yours &c.,
Percy R. Lowe.

The Hatch, Windsor,
June 19th, 1908.

Proposed Prohibition to Import the Plumage and Skins of Wild Birds.—All Ornithologists will rejoice to hear that Lord Avebury's Bill to prohibit the importation of the skins and plumage of Wild Birds was read a second time in the House of Lords on May the 19th, and referred to a Select Committee. There is probably little chance of the Bill becoming law this year, but it is a good piece of work to have got it even so far on its way, and we are glad to see that it has met with approval from every side. The following is an extract from the explanatory memorandum prefixed to the Bill:—

"The object of this Act is to check the wanton and wholesale destruction of birds which is being carried on everywhere throughout the British Empire, and in all parts of the world, without regard to the agricultural, educational, and æsthetic value of birds. As a proof of the extent of the destruction that at present goes on, and which is threatening the extinction of some of the most beautiful species, it may be mentioned that at the plume-auctions held in London during the last six months of 1907 there were catalogued 19.742 skins of the Birds of Paradise, 1411 packages of the nesting plumes of the White Heron (representing the feathers of nearly 115,000 birds), besides immense numbers of the feathers and skins of almost every known species of ornamental-plumaged bird. At the June sale, held at the Commercial Sale Rooms, 1386 Crowned Pigeons' heads were sold, while among miscellaneous bird-skins one firm of auctioneers alone catalogued over 20,000 Kingfishers. A deplorable feature of the recent sales is the offer of large numbers of Lyre-birds' tails and of Albatross' quills. The constant repetition of such figures as those given above—and these plume-sales take place at least every two months—shews that the Legislature must choose between the extermination or the protection of the birds in question."

The operative clauses of the Bill are:—

"1. Any person who, after January first, one thousand nine hundred and nine, shall import or bring into the United Kingdom for the purpose of sale or exchange the plumage, skin, or body, or any part of the plumage, skin, or body, of any dead wild bird which is not included in the schedule of exemption to this Act, shall be guilty of an offence, and shall on summary conviction be liable to a penalty of not exceeding five pounds, and for every subsequent offence to a penalty of not exceeding twenty-five pounds, and in every case the Court shall order the forfeiture and destruction of the articles in respect of which the offence has been committed.

"Provided that this section shall not apply—

"(*a*) to anything done by virtue of a licence issued from time to time by the Board of Trade under such conditions and regulations as they may prescribe for the purpose of supplying specimens of any birds not included in the schedule to any particular natural history or other museum or for the purpose of definite scientific research; or

"(*b*) to the plumage, skin, or body, or to any parts thereof, of any bird not included in the schedule to this Act and forming part of the wearing apparel being *bona fide* the property of and either actually in the use of or accompanying any person entering the United Kingdom and not being for the purpose of sale or exchange. Every such person shall if so required make a written declaration to this effect.

"2. On the advice and with the consent of the Privy Council the name of any other foreign wild bird may at any time be added to or removed from the schedule to this Act by notice published in the 'Gazette,' and thereupon the provisions of this Act shall take effect as if such bird had been included in or removed from the schedule to this Act.

"The following is the schedule referred to in the Bill:—

"BIRDS EXEMPTED.

"1. Ostriches.
"2. Eider Ducks.
"3. Wild birds used as articles of diet."

Mr. Douglas Carruthers.—Writing from his winter-quarters at Samarkand (see above, p. 388), on April 14th, Mr. Carruthers says that he was just starting on a five-months' expedition into Eastern Bokhara, "where there is a curious mixture of country on the borders of Afghanistan—dense jungle in the low valleys and some of the highest mountains in Central Asia." He had collected some 500–

600 specimens, and at the time of writing had plenty of work with the spring-migrants. After next October his plans are not yet settled, but he may possibly go back to Beyrout.

Mr. J. C. McLean, M.B.O.U.—Mr. McLean has presented the bird-skins relating to his article "On some Bush-birds of New Zealand," and to Mr. Ogilvie-Grant's "Appendix" to it published in 'The Ibis' for last year (pp. 519, 542), to the British Museum, and hopes to be shortly able to send home more specimens of *Pseudogerygone* so as to enable Mr. Ogilvie-Grant to complete his investigations on that difficult genus.

The Birds of the Ruwenzorian Expedition.—It has been arranged that a series of papers on the results of the Ruwenzorian Expedition (1905–6) shall be read before the Zoological Society of London, and published in a special volume of that Society's 'Transactions.' The introduction will be written by Mr. W. R. Ogilvie-Grant, to whom is due the great credit of having organized and arranged this successful Expedition, and the general narrative by Mr. R. B. Woosnam. The Mammals will be described by Mr. Oldfield Thomas and Mr. R. C. Wroughton, and the Reptiles, Batrachians, and Fishes by Mr. G. A. Boulenger. Mr. Ogilvie-Grant is himself at work on the Birds, among which are representatives of 24 species new to science. The examination of the Insects and other Invertebrates has been undertaken by various specialists, mostly on the staff of the British Museum. The Flora of Ruwenzori, based on the large collection of plants made on this occasion, will be published by the Linnean Society.

The Raffles Museum at Singapore.—By the kindness of Dr. R. Hanitsch we have received copies of the 'Report of the Raffles Library and Museum' at Singapore for the year 1907, and of the 'List of the Birds in the Raffles

Museum.' We are glad to see that this useful Institution is in good case, and that the zoological collection has been recently moved into a new building. Among the recent additions to it is a Bittern (*Botaurus stellaris*) obtained on the Perseverance Estate, Singapore. The Bittern is well known as a winter-visitor to North India and Burmah, and has been obtained as far south as Pegu, but its occurrence at Singapore has not, so far as we are aware, been recorded.

Live Paradise-Birds in London.—No ornithologist who goes to London this summer should omit to visit the Bird House in the Zoological Society's Gardens and inspect the beautiful series of Paradise-Birds now on view there. They comprise examples of five species, represented by ten individuals.

1. *Paradisea apoda.* Of this there is a splendid male in full plumage, which, if judiciously fed with meal-worms, can be induced to "show off" in the most delightful manner. He is not, however, on good terms with two in the adjoining cage, one of which is certainly a hen while the other *may* be a young male.
2. *Paradisea minor.* One male.
3. *Paradisea rubra.* One male.
4. *Seleucides alba.* One male.
5. *Cicinnurus regius.* Two pairs.

New Expedition to East Africa.—It is announced in the last number of the 'Ornithologische Monatsberichte' that two German ornithologists—Dr. A. Berger and Herr Hauptman Roth—are planning a new collecting-expedition into Eastern Africa, starting from Nairobi next autumn. They propose to visit Mt. Kenia, Leikipia, Lake Baringo, and Mt. Elgon, and after going round Lake Victoria to pass across Uganda to Lake Albert, and to return home down the White Nile.

Pallas's Sand-Grouse.—In a letter to the 'Field' (13th June, 1908, p. 982), Mr. Jean Stolzmann, of the Branicki Museum, Warsaw, announces that numerous flocks of Pallas's Sand-Grouse (*Syrrhaptes paradoxus*) appeared in Eastern Galicia (Austrian Poland) in May last.

Herr Th. Lorenz, writing in 'Ornith. Monatsb.' (1908, p. 100), records the appearance of many of these Sand-Grouse this year in European Russia. The first specimen was obtained near Moscow on the 16th of April, and two others in the Government of Rjusan on the same day. On the 18th April a flock of 15 was observed near Twer, and one example was shot. On the 18th a specimen was obtained near Span-Tamhoff, and on the 19th two males near Tula, where there was said to be large flocks.

There would appear, therefore, to be a probability of a fresh invasion of this curious vagrant into Western Europe.

The Jubilee of the B. O. U.—It has been decided that the General Meeting of the B. O. U. (to celebrate the completion of the fiftieth volume of 'The Ibis') shall be held in London on Wednesday, Dec. 9th. Further particulars will be sent to all the Members of the B. O. U.

The German Ornithological Society.—It is announced in the 'Ornithologische Monatsberichte' that the Annual Meeting of the Deutsche Ornithologische Gesellschaft for this year will be held at Danzig on Oct. 2nd–4th. On the 5th and 6th, after the meeting, an excursion will be made to Königsberg and the Ornithological Observatory of Rossitten, when the new building of the Observatory will be formally opened. For further information application should be made to Herr Prof. Dr. Lakowitz in Danzig (Frauengasse, 26). We hope that some British ornithologists may be able to attend the meeting, and can assure them (from past personal experience) that they will receive a hearty welcome.

THE IBIS.

NINTH SERIES.

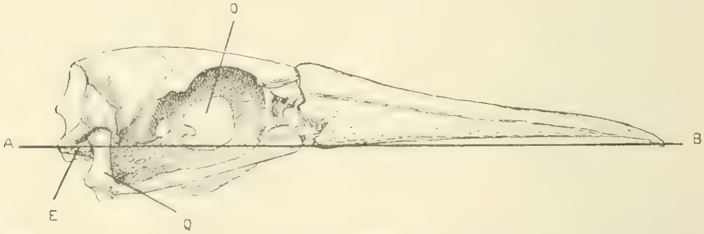
No. VIII. OCTOBER 1908.

XXVI.—*On the Position of the Ear in the Woodcock* (Scolopax rusticula). By W. P. Pycraft, F.Z.S., M.B.O.U.

It has long been known that in the matter of the position of the external aperture of the ear, taken in its relation to the eye, the Snipe (*Gallinago*) differs markedly from all other birds. It appears, however, to have generally escaped the notice of naturalists that this peculiarity was still more marked in the Woodcock (*Scolopax*), wherein the aperture of the ear comes to lie under, and in front of, a line drawn vertically through the anterior canthus of the eyelid and at right angles to the long axis of the beak—the only measurement which can be adopted when the bird is examined in the flesh. This may be called the sportsman's test and the test of the field-naturalist. In the Snipe, it may be remarked, the aperture lies less far forward—under the eye, in short, when measured by the test just described. The still more abnormal position of this aperture in the Woodcock escaped notice, because it was assumed that what obtained in the Snipe would naturally obtain also in the Woodcock. That this, however, is not the case was first discovered, so far as the evidence goes, by my friend Mr. C. Whymper, who induced me to undertake the task of bringing it to the notice of ornithologists, which I did in the columns of 'The Field,' May 18, 1907.

Typically, it may be remarked, this aperture lies at a considerable distance behind the eye, when a bird is examined in the flesh. But to get to the bottom of this matter, it is necessary to carry the investigation a little deeper—to study the skull, in short. And to properly appreciate the nature of this very remarkable departure from the type which the Snipe and Woodcock exhibit, a survey of the skulls of a few other less specialized birds is necessary. That of the Gannet affords an admirable illustration. Herein attention may first be drawn to the position of the quadrate, behind the articular head of which lies the external auditory aperture (text-fig. 2, E). This bone, then, is, as it were, suspended from the extremity of a short flying buttress springing from the hinder portion of the brain-case, almost the whole of which, it will be noticed, lies in front of this buttress; furthermore, it may be remarked that it is roughly cordiform in shape. Very well. Now as to the aperture of the ear. This, it will be seen, is small, lies immediately behind the articular head of the quadrate, and is overhung by a projection from the buttress just referred to—the paroccipital process. Furthermore, it will be noticed, this aperture is far removed from the orbit.

Text-fig. 2.

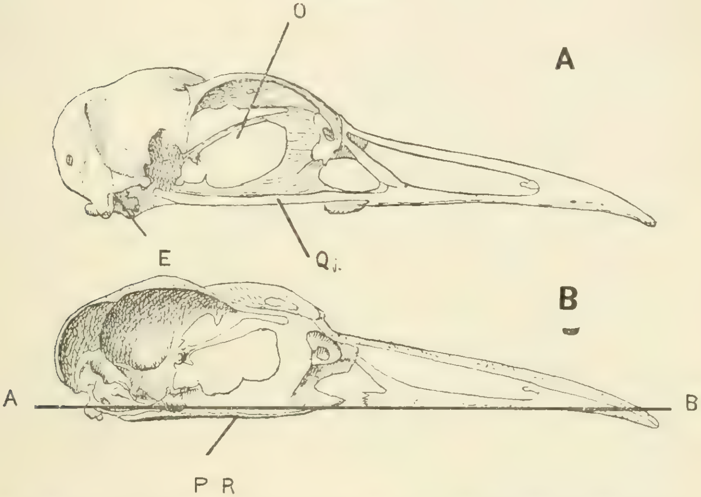


Side view of the skull of a Gannet (*Sula bassana*), shewing the position of the external auditory meatus (E) and the long basicranial axis running parallel with the long axis of the beak, indicated by the line A–B.

O=Orbit. E=Aperture of the ear. Q=Quadrate.

In the Guillemot (text-fig. 3, p. 553) it will be seen that while the shape of the temporal region of the skull agrees roughly with that of the Gannet, it has been brought more forward, nearer to the orbit, but the aperture of the ear is still far from the hinder border of this cavity. The relative position of the quadrate has also somewhat changed, for while in the Gannet its vertical axis slopes obliquely backwards (caudad), in the Guillemot it has an exactly opposite direction.

Text-fig. 3.



A. Outer side of the skull of a Guillemot (*Lomvia troile*), shewing the position of the external auditory meatus (E) and the long basicranial axis running parallel with the axis of the beak, indicated by the line A–B in text-fig. B.

O=Orbit. Qj.=Quadrato-jugal bar concealing the lower border of the parasphenoidal rostrum, which is seen in B at P.R.

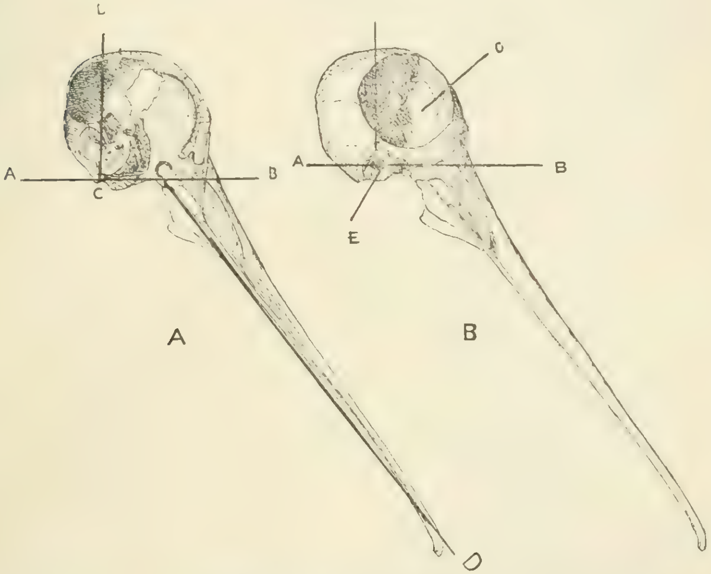
B. Inner view of the same skull, shewing the form of the brain-case and the basicranial axis (A–B).

Turning now to the Oyster-catcher (*Hæmatopus*), very marked changes in these relations are to be found. Here, it will be noticed, the aperture of the ear has come to lie immediately under the posterior border of the orbit; while the quadrate has its long axis turned forwards. This change has been accompanied by very marked alterations in the form of the cranium, which is almost hemispherical in shape, while the foramen magnum now looks downwards rather than backwards. Furthermore, while in the Gannet this foramen looks directly backwards, and is placed at right angles to the basicranial axis, in the Oyster-catcher it forms an obtuse angle with this axis. But more striking still is the change in the relative position of the brain. In the Gannet the cerebrum and cerebellum lie one in front of the other in a plane parallel with the basicranial axis, but in the Oyster-catcher the brain-cavity has, as it were, rotated through a large segment of a circle, whereby the long axis of the cerebrum has come to be almost at right angles to the long axis of the skull!

In the Snipe all these characters are still further exaggerated, so that now the external aperture of the ear has come to lie just caudad of the middle of the inferior margin of the orbit, while the quadrate is now brought under the very middle of the orbital floor, though its articular surface lies considerably caudad of this area.

The Woodcock (*Scolopax*) forms the culminating point of all these peculiarities, which here attain their maximum development. The skull, in longitudinal section, is almost circular, while the orientation of the cranium (brain-case), through the excessive shortening of the basicranial axis to be described presently, has become profoundly changed. Thereby the long axis of the brain no longer lies in the same horizontal plane as the basicranial axis—that is to say, it no longer lies parallel with this, but forms therewith a right angle (text-fig. 4, p. 555). A line drawn vertically through the middle of the auditory meatus, at right angles to the long axis of the cranium, passes through the posterior third of the orbit, while if this line be drawn at right angles to the long axis of the beak it will pass through the anterior margin of the orbit, which would be in front of a similar vertical line passing through the periphery of the iris (text-fig. 4). Thus, then, if the head of a recently-killed Woodcock be examined, the aperture of the ear will appear in a quite abnormal position, for if a line be drawn at right angles to the long axis of the beak, and passing through the periphery of the anterior margin of the exposed surface of the eye, the aperture of the ear will be found lying in front of this line. In other words, when examined in relation to the beak as just described, the aperture of the ear appears to lie in front of, and below the level of, the eye. A comparison of text-figs. 4 (A & B) will make this clear.

Text-fig. 4.



A. Inner view of the left half of the skull of a Woodcock (*Scolopax rusticula*), shewing the brain-case and the relation thereof to the basicranial axis.

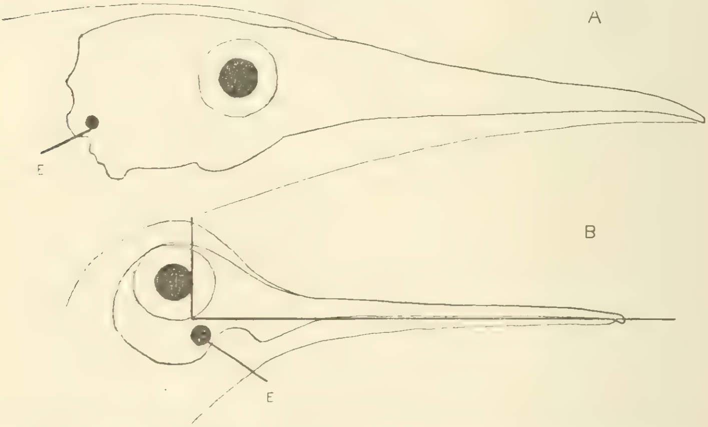
The line A–B = a line drawn though the basicranial axis; the line C–D = a line drawn from the occipital condyle through the brain-case, at right angles to the basicranial axis. This figure is not quite accurately drawn, hence this line passes too far to the left; its true position is indicated by the short line to the right of C–D.

B. Outer view of the same skull, shewing the relation of the external aperture of the ear (E) to the basicranial axis (A–B). O. Orbit.

In the Snipe this aperture is less forward in position, but it is still markedly different in this relation to what obtains in other birds, since here it appears to open immediately beneath the eye.

Although this shifting of the external aperture of the ear in relation to the orbit has not been accompanied by such profound structural changes as a superficial comparison of this aperture between, say, a Gannet and a Woodcock (text-fig. 5, A & B) might lead one to expect, yet, as a matter of fact, this shifting is associated with very striking skeletal modifications, and these, as we have already indicated, are mainly confined to the cranium. The disturbing factor is apparently the shortening of the basicranial axis. This interpretation was first given by Prof. D'Arcy Thompson in an article in 'The Field,' Nov. 16, 1907 (vol. 110, p. 887). Therein, however, the extent of the changes in the conformation of the Woodcock's skull were unduly minimized, for the author sought to shew that, while in a skull such as that of the Guillemot the long axis of the cranium was parallel with that of the upper jaw, in the Woodcock these two axes formed almost a right angle with each other—to be quite precise, about 70° (text-fig. 3).

Text-fig. 5.



A. Diagrammatic side view of the head of a Gannet, shewing the outline of the skull and the position of the external aperture of the ear (E) and eye.

B. Similar view of the head of a Woodcock, to shew the forward position of the ear.

Prof. D'Arcy Thompson sought, as we have remarked, to shew, by constructing various angles, in how little the skull of the Woodcock really differed from that of other birds; and thereby he has obscured some really striking facts in regard to these changes which have been brought about in the form of the cranium and its relation to the beak, to which we shall return presently. The outline diagrams (text-fig. 5, A, B) of the skulls of the Gannet and Woodcock will shew at a glance the relative changes of position between the aperture of the ear and the eye, while in text-figs. 3 and 4 the changes in the form of the brain-case are no less strikingly demonstrated. Thus, in the Gannet a line through the occipital condyle at right angles to the basicranial axis of the skull passes through the foramen magnum—that is to say, passes out behind the brain-case; but a similar line through the occipital condyle of the Woodcock passes through the middle of the brain-case!

And now as to the relation of the beak to the long axis of the cranium. In the more primitive skulls—as, for example, in the Gannet and Guillemot—the basicranial axis and the long axis of the beak run parallel one to another, while in the Woodcock the long axis of the beak runs almost at right angles to the basicranial axis. By the shortening of this axis the cranium has become tilted backwards, or, more correctly, as the base of the cranium shortened the foramen magnum was brought nearer the base of the beak, thereby throwing the floor of the metencephalic fossa into a vertical position, and bringing the cerebellar fossa into such a position that it now lies beneath, instead of behind, the cerebral fossa—a truly remarkable case of shifting parts.

SUMMARY.

Prof. D'Arcy Thompson, in the article to which reference has already been made, remarks: "The Woodcock's ear is very little, if at all, out of its normal place when looked at in relation to the base, or hinder part of the skull. In other words, it is not the Woodcock's ear, but its bill that is abnormally situated." But the weight of evidence, it seems to me, points entirely to an opposite conclusion. The cranium of the Woodcock, when compared with that of the Gannet, for example, has obviously undergone very profound modifications, and these have come about by what may be described as a process of telescoping the basis cranii; thereby the brain-cavity has completely changed its shape, and the aperture of the ear with the rest of the hinder portion of the cranium has been swung downwards and forwards towards the base of the beak, the long axis of which virtually retains its primitive angle. This being so, and the evidence is incontrovertible, it is not the beak which is abnormally situated but the aperture of the ear, as I originally contended. Furthermore, let me repeat once more, the ear of the Woodcock is *not* "just under the eye" as in the Snipe, as was contended by a writer in 'The Field' for Sept. 7, 1907 (vol. 110, p. 479).

XXVII.—*Observations regarding the Breeding-Seasons of the Birds in Southern Kamerun.* By G. L. Bates, C.M.Z.S., M.B.O.U.

(Plate XI.*)

With reference to our northern birds, we are so accustomed to the facts that they nest and breed at a certain time of the year, moult at another, and migrate (in many cases) at a third, that it is hard to realize a state of things in which there is no such regular observance of seasons among birds. On coming to the tropical forest-country of West Africa the ornithologist expects to find breeding- and moulting-seasons among the birds. The assumption that they have such seems to underlie the published accounts of different

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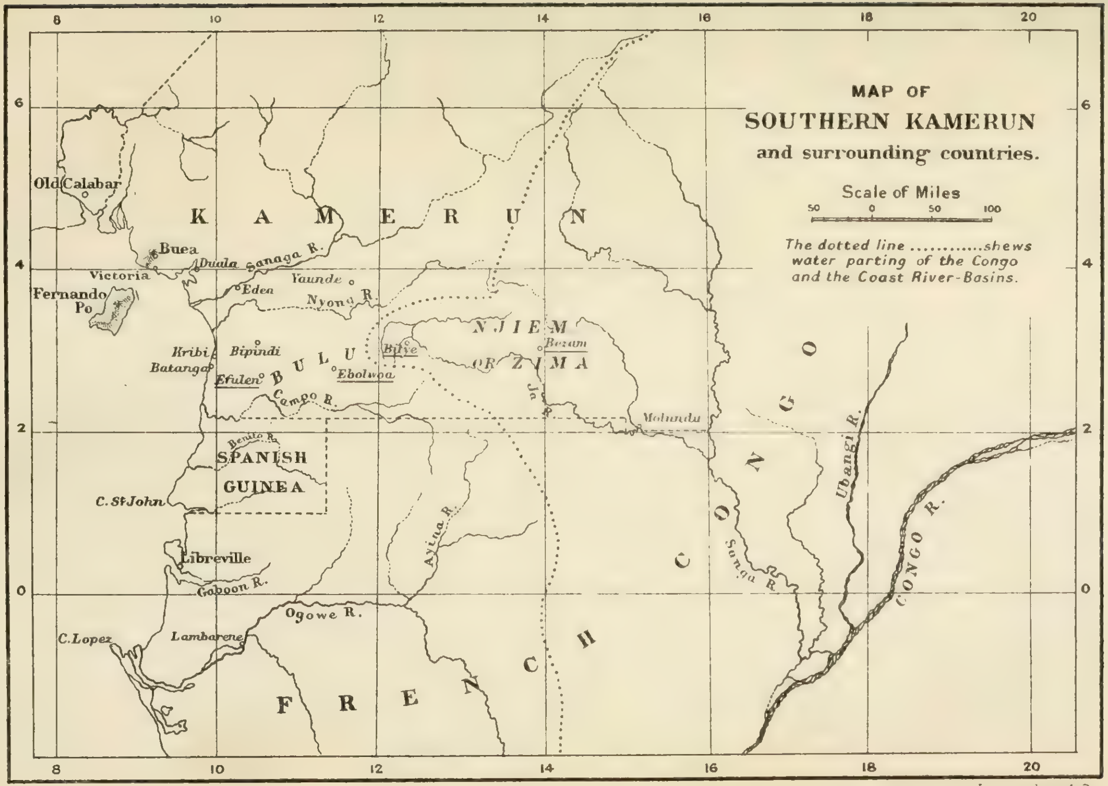
* This map has been prepared to shew the localities of the places mentioned by Dr. Bowdler Sharpe and myself in this and former papers on the Birds of Southern Kamerun. See 'Ibis,' 1904, pp. 88, 591; 1905, pp. 89, 461; 1907, p. 416, and 1908, pp. 117, 317. It will be observed that some of the inland places are in the water-basin of the Congo.—G. L. B.



MAP OF
SOUTHERN KAMERUN
and surrounding countries.

Scale of Miles

The dotted line ....shews water parting of the Congo and the Coast River-Basins.

50
0
50
100
8
10
12
14
16
18
20
6
4
2
0
KAMERUN
Old Calabar
Buea
Victoria
Duala
Sanaga R.
Fernando Po
Yaunde
Edea
Nyong R.
Kribi
Batanga
Bipindi
Efulen
BULU
Ebolwoa
Bitye
NJIEM OR ZIMA
Bezam
Ja R.
Campo R.
Molundu
Benito R.
SPANISH GUINEA
C. St John
Libreville
Gaboon R.
Ogowe R.
Ayina R.
C. Lopez
Lambarene
FRENCH CONGO
Sanga R.
Ubangi R.
CONGO R.

Leonardsen & Co

authors, in which it is said of such and such a bird that it breeds in such and such a month. A conclusion is drawn, for example, from the fact that a bird has been found not breeding in August, and another of the same species breeding in September, that the breeding-season of this species begins in September. With the idea that there must be definite seasons in the life of the birds here, I set out, several years ago, to find out what those seasons were, by keeping a record of the condition of the breeding-organs of the birds which I examined. But when, after a time, I tried to arrange these observations and draw up conclusions, order failed to appear. The more observations I made, the more the confusion increased. When I had details for only a few examples of a certain species recorded, it often looked as if I had found a breeding-season for that species. But further observations nearly always contradicted those previous to them, and it became evident that there was great irregularity in the times of breeding.

Thus I had to give up the hope of establishing definite breeding-seasons for the birds of Kamerun in general. But still it seemed worth while to go on with the record, to see if I could find some groups or species that formed exceptions to the general irregularity, or to ascertain in some birds a preference for one season over another, denoted by a greater number of instances of breeding in that season. And if nothing more were shown, still it would be worth while to establish firmly the fact that the birds of the forests of Southern Kamerun have no distinct breeding-seasons, but that each pair performs its functions in its own time, without reference to others of the species, and without reference to season.

So two or three years ago I began to keep a fuller record than before. I put down in my note-books the condition of the sex-organs not only of the birds skinned, but of many also that were thrown away, including such as were too badly injured for specimens, and such as were brought to me in too great numbers by native boys who caught them with their snares. I recorded also the dates of nests with eggs or young, and the times at which conspicuous breeding-plumages were seen in such birds as *Pyromelana*. These records I have now tabulated, under the months of the year, for about a hundred species—those for which the greatest number of observations were made. From these tables I have drawn the summaries and conclusions which follow.

Evidences of Breeding.

In drawing conclusions as to the breeding-season from the condition of the sex-organs, it is assumed that in the male the testes are enlarged only at the period of breeding. This enlargement may last during all the courting, nesting, and incubating period, but surely ceases after the brood is reared, unless preparations are made immediately for another brood. In birds of certain families the size of these organs seems to vary little. This is true in the Accipitres, in the Woodpeckers, and in many other Picarian birds. Extremely small testes have been found generally only in birds shewing by their plumage, colour of bill, tender skin and bones, or otherwise, that they were young. In many species in this country (to be noted later) these organs seem never again to become small after maturity is reached. Winter migrants from the north have the sex-organs more reduced than adult resident birds are often found to have.

So, also, in female birds, the condition in which the ovaries are small and thin and hard to see is not often met with except in birds shewing signs of immaturity, and in winter-migrants from the north. Generally there may be seen small ova of various sizes. The growth of the ova must be slow, and they are probably present for a considerable period. The absorption of those which are not fertilized takes place, too, rather slowly, for ova are found in the bodies of sitting females, and even of mother birds after the brood has been hatched out. The most exact indication of the laying period, except the presence of large ova or a full-sized egg, is the enlarged oviduct. The presence of the empty sheaths or sacs of the ova, after these have ripened and burst out, shews that eggs have recently been laid. If these are carefully counted, the number of eggs laid may be seen. By still other indications a sitting bird may be known. The nearly bare tract of skin on the abdomen becomes completely bare and more or less extended at the sides in a sitting bird, and the innermost layer of the skin next the body becomes swollen and watery.

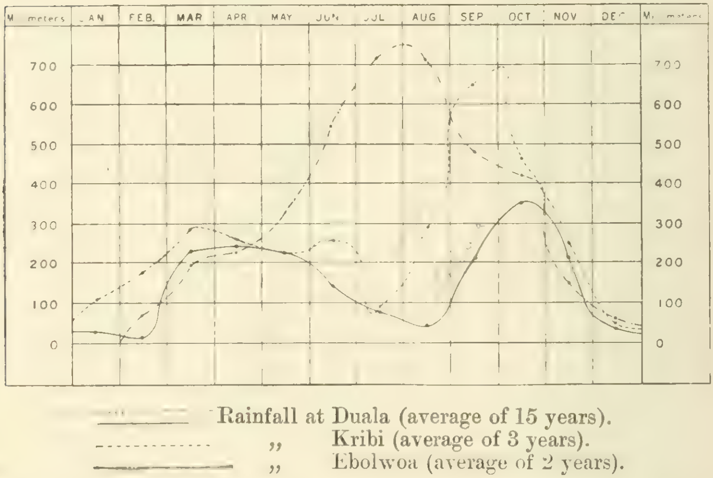
The Seasons in Southern Kamerun.

The temperature here may be said, for practical purposes, not to change at all in the different seasons. But there is a good deal of variation in the rainfall in different months. There is a sort of double year, each half of the year having a dry and a rainy season. The rainy seasons come about the equinoxes, when the sun is directly overhead near the equator, and the dry seasons about the solstices. The times when the dry seasons occur correspond, the one to the dry season in Africa south of the equator, which is at its height in July; and the other to the dry season further north, which is at its height in January. These statements apply to the climate of the *southern* part of Kamerun only. Even at Duala, only a little north of Kribi, the southern dry season has disappeared, and the months of July and August have become the rainiest of the year.

I have obtained exact figures for the rainfall in each month at Duala, Kribi, and Ebolwoa, from records kept by officials of the German government (see text-fig. 6, p. 562). At Kribi the rainfall "curve" runs high all through March, April, May, and June; descends in July; but rises again in August, and reaches the highest point of the year in October; and in November descends again, to remain low in December, January, and February. At Ebolwoa it attains its first high point in April, is low all through June, July, and August, and reaches another culmination, the highest of the year, in October.

At Efulen, my general impressions, from several years' residence there, would lead me to say that the times of the seasons correspond rather to those of Ebolwoa than to those of Kribi—the changes being later than at the coast, and the dry season of July and August being longer. For the seasons at Bitye, where the greater part of my record of the breeding-seasons was made, one cannot go far wrong in following the curve of Ebolwoa. At Bitye the later rainy season culminating in October is much the more pronounced and the driest month is February, the dry season often extending well into March.

Text-fig. 6.—Diagram of Rainfall in Kamerun, based on the Records of the German Officials.



The rainfall decreases as one leaves the coast. The total for the year at Kribi is 3·14 metres, at Ebolwoa 1·1 metres, and at Bitye it must be still less.

Summaries of Observations on Breeding, for different Groups.

The Doves.—Of *Vinago calva* alone had I a sufficient number of recorded observations to warrant any conclusions; but of it, birds with large sex-organs, or birds sitting on the nest, are recorded for all the four seasons, the two dry and the two rainy ones. Moreover, not only are some of these Green Pigeons always found breeding, but nearly all individuals that have been examined were breeding.

The Francolins.—The larger Francolin, the Okwal (*Francolinus squamatus*) which lives among the thickets bordering villages and plantations, seems to breed most often in the drier dry season, from December to March. In those months eggs have been found a number of times, and none, as yet, in other months. The Obem (*F. lathami*), on the contrary, which lives in the forest, has been found breeding at all times of the year.

The Cuckoos.—The Common Coucal (*Centropus monachus*) has been found laying or sitting in both dry seasons, but not as yet in a rainy season.

Of the Golden Cuckoos, specimens of *Chrysococcyx cupreus* were found to be breeding in April, June, July, and December, and a young bird not fully fledged was found in March. Of *C. klaasi*, individuals in breeding condition are recorded in January, February, March, June, and a young one in December. A breeding male *Metallococcyx* has been shot in November. The months are here named, in the case of these birds, not only to shew that they breed at all seasons, but also to shew, incidentally, that they are found breeding here in the same months as those in which the same species breed in South Africa.

The Barbets.—Instances of some species of *Gymnobucco* and *Heliobucco* (which are united in one genus by Reichenow) have been found at all seasons, but there seems to be a preference for the dry seasons. Among nine examples of *Heliobucco bonapartei* shown to me from the holes in one dead tree, on the 1st of April, there were young birds of different ages; and an egg was found at the same time. Probably in these colonies some individuals are breeding at all times.

The little Barbets of the genus *Barbatula* seem to prefer the dry seasons for breeding.

The Woodpeckers.—The tiny *Verreauxia*, of which a good many specimens were examined, clearly prefers the dry seasons for breeding. Of ordinary Woodpeckers, breeding-birds have been found at all seasons. These birds are not such continual breeders as some others, for a large proportion of them, found at all times, were not in the breeding condition.

The Colies.—Many nests of *Colius nigriscapalis* with eggs or young were found, besides the birds killed, of which the breeding-organs were examined. The greater number of the nests with eggs, and also of the breeding-birds, were obtained in the two rainy seasons; and the greatest number of all in the rainiest time, October and November. Yet not all were found at those times: breeding-birds were killed in December and in February, and a nestling was found in August—all dry months.

The Hornbills.—Specimens of the large black Hornbill (*Ceratogymna atrata*) were examined on the two collecting-trips in the great forest near the coast, between Efulen and Kribi: the first in the month of September, which is very rainy there, and the other in July, a dry month. In September, of three birds none were ascertained to be near their breeding-time. In July (with the last days of June), of six birds all had the sex-organs more or less enlarged. This evidence, so far as it goes, points to a preference for the dry season; but in the fragmentary evidence at hand regarding other Hornbills, no such decided preference appears.

The Bee-eaters.—The two species of *Melittophagus* seem to prefer the first (and at the Ja, where the recorded observations were all made, the drier) dry season. Yet eggs of *M. australis* were found also in April, which is moderately rainy.

The Goatsuckers.—All the specimens obtained were breeding; this is partly, no doubt, because most of them had been shot while sitting on their eggs. They breed in the two dry seasons and in the first, or more moderately rainy one.

The Flycatchers.—Of birds of this family a large number of observations are recorded for a good many species. I have written out summaries for several of these species but the results may be told in few words. They shew no particular preference, breeding-birds and young being found at all times of year. One of the species on which most observations have been made is *Pœdilorhynchus camerunensis*, and it has been found breeding in February, March, April, June, September, October, and December—that is, at all seasons. The apparent preference of *Elminia longicauda* for the month of June has already been noticed in 'The Ibis' (1907, p. 456); but such an exceptional thing as a distinct breeding-season for this species would require a very great number of observations to prove it.

There are no more constant breeders among the birds than the Paradise Flycatchers (*Tchitrea*). The commonest species, *T. viridis*, has been found breeding generally by being caught or shot on the nest, in every month of the year except two; and in both of these two months breeding-birds of one of the other species of *Tchitrea* have been recorded. There is not a single record of an adult *T. viridis* with the breeding-organs small or of an adult male without the long tail-plumes.

The Shrikes.—Of no one species of the Shrike-family is the record complete throughout the year. But I have recorded breeding-specimens or nests of some of the species in every one of the four seasons.

The Starlings.—There are breeding-birds of some of the three species in each of the dry seasons, and none in the rainy seasons; but the observations are not so numerous as in the case of some families.

The Ploceine Weavers.—Birds belonging to the section *Ploceinæ* of the Weaver family (with two exceptions) breed at all seasons. Whenever nests of the Village-Weaver (*Hyphantornis*) have been pulled down and examined, some of them have been found to contain nestlings or eggs. This has been done, according to my records, in seven months of the year and in each of the four seasons. The record of *Heterhyphantes nigricollis* shews breeding-birds or nests with eggs in seven months and at all four seasons. The more scattered records of the other birds of Reichenow's genus *Ploceus*, and of the genus *Malimbus*, shew breeding-birds in both rainy and dry seasons, in both halves of the year. The exceptions are in the genera *Spermospiza* and *Amblyospiza*. These seem to breed in the half of the year from June to December, and not in the half from December to June, as do the birds which follow.

The Spermestine Weavers.—Examination of the birds of this large group shews a very different result from that obtained in any other group of species, in that all the breeding-birds are found in a distinct half of the year. The males of *Pyromelana flammiceps* assume their gorgeous breeding-plumage in July, and lose it about January ; there is no doubt that the species breeds only in the second half of the calendar year. The Widow-bird (*Vidua serena*), which has also conspicuous breeding-plumage, has been seen in this plumage in the same months of the year as *Pyromelana*, though it has not been observed so often. In the little birds belonging to *Spermestes*, *Estrilda* (including *Sporæginthus*), *Pytelia*, and *Nigrita* there is no such change of plumage ; for all the examples of these species in a duller plumage that I have seen I take to be immature. Yet all these small *Spermestinæ* have the same breeding-season as *Pyromelana* and *Vidua*; for the large number of specimens which I have examined shew none breeding in the first half of the year, and many in the second half. But in some cases there are breeding-birds in June, in which case we must say that the breeding-season begins early. The genus *Nigrita*, too, shews two or three exceptional instances of breeding-birds in May and January ; but these months border on the regular breeding-months. With these exceptions none of the scores of individuals of these Weavers examined were found breeding in the first half of the year. The few specimens of *Pyrenestes* form no exception to the rule. The genera *Amblyospiza* and *Spermospiza* agree with the *Spermestinæ* in respect of the breeding-season.

There is nothing in the changes of seasons in Southern Kamerun that seems to account for the habit these birds have of breeding at a distinct part of the year only.

Perhaps it is a habit brought from another region, as the grass-lands lying to the north.

The Pycnonotidæ.—Of no kinds of birds have more individuals been examined than of *Bleda notata* and *B. syndactyla,* of which numbers—far more than I skinned—were brought to me, caught in snares. But the result of all these examinations was merely this: these species breed at all seasons alike. Many adults are found not breeding, however, shewing that these birds do not breed continually, as some others seem to do.

In the other species of *Bleda,* forming the genus *Phyllastrephus* of the 'Vögel Afrikas,' my record is not so full, but it shews the same result, so far as it goes—breeding-birds at all seasons. The like result is also obtained in *Andropadus* (including *Eurillas*), and here scores of birds were examined in ten months of the year. Of *Pycnonotus gabonensis* breeding-birds, or nests with eggs, are recorded for every month except December, for which no birds, either breeding or not, are recorded.

The Sun-birds.—Of the Sun-birds in general, some individuals are found breeding, and some not breeding, at all seasons. Of the species most fully recorded, *Cyanomitra obscura,* there are breeding-birds for every month except March, when no specimens seem to have been examined; while in October, the rainiest month, no birds had the sex-organs much enlarged. *Cinnyris chloropygia* shews breeding-birds in all the four seasons except the second (and greater) rainy time.

The Warblers.—Of the little Warblers of waste and cultivated ground, *Cisticola erythrops* and *Camaroptera griseiviridis* are most fully recorded. Each of these shews breeding-birds at every season. So do the two species of *Burnesia* and *Hylia prasina,* though the number is not so great.

Of the two species of *Stiphrornis,* of which many individuals were snared in the forest, the combined record shews breeding-birds at all seasons, one filling up the gaps of the other.

The Thrushes.—*Turdus saturatus* has breeding-birds, or nests with eggs, at all seasons, but with a decided preference for the rainy months. In the drier of the two dry seasons no nests were found, and two out of three birds examined were not breeding. *Neocossyphus poensis* furnishes breeding-birds in every season except the drier dry season, and in this case a good many birds were examined in that season and found not breeding. Exactly the same thing is true of *Cossypha cyanocampter*, and of the two species of *Alethe*. *Callene* shews breeding-birds in all the seasons, and so do the three common species of *Turdinus*. Of all the birds here mentioned under the "Thrushes," except *Turdus* itself, great numbers were caught in snares on the ground, and many observations were recorded.

Seasonal Changes of Plumage and Moulting.

Of no bird that is a resident of Southern Kamerun and breeds there, excepting the two or three already noticed belonging to the Spermestine division of the Weavers, do I know that it has a "winter plumage"—that is, that having once changed from the plumage of the immature bird to that of the adult, it again assumes a plainer plumage, or one resembling that of youth. When the males of *Hyphantornis cucullatus*, to take the most familiar instance, have assumed their bright yellow and black colours, they seem to keep them for the rest of their lives. This is in accordance with the fact already stated, that when adult they always have the breeding-organs large.

I have looked up several facts from my note-books regarding the Sun-birds in particular, which all tend to shew that when the males have once assumed the bright metallic colours, they never lose them again.

(1) Examples of birds changing from the plain to the metallic or velvety plumage have been noted in the cases of *Cinnyris superba*, *C. chloropygia*, and *Chalcomitra angolensis*. But an example has never been noted in which the change is from the metallic or velvety into the plain plumage. I have particularly attended to this point.

(2) Examples of adult male *Chalcomitra angolensis* have been noted which were moulting, and had the old feathers and the new of the same colour, except that the old were dull and bleached-looking. Examples of adult male *Cinnyris chloropygia*, also, are recorded as moulting, but not changing in colour.

(3) Adult males of *Cyanomitra obscura* always have the yellow pectoral tufts. Many examples are recorded of males with the testes small having tufts. They seem never to be lost, but to grow paler when the plumage is old, and to come out brighter after the moult.

There seems to be the same irregularity about times of moulting among the birds of this country as about the times of breeding. Moulting-birds are found at all times of the year. The moult seems to take place, also, without much reference to the breeding-condition of the bird. While doubtless the majority of birds found moulting have the sex-organs small, a very great number of birds of widely different kinds have been noted that were moulting while breeding. But the moult in such cases seems to be gradual, only a few feathers being renewed at one time.

General Conclusions.

Most of the species in Southern Kamerun have no distinct breeding-season. In many, all or nearly all the adult individuals are engaged more or less in the activities of reproduction at all times of the year. In others, some may be found breeding, and some not, at all times.

Certain species—as the Woodpeckers, Barbets, and Starlings—seem to be hindered in breeding by the rains, or for some reason, at least, to prefer the dry season. They seem to be mainly birds which breed in holes in trees.

Other species—as the Colies and the Thrushes and their allies—seem to prefer the rainy season.

But certain Weavers, mainly those of the Spermestine group, have a definite half of the year in which all their breeding is done. Herein they are exceptional among the birds of the country.

Reichenow says, in the introductory pages of the 'Vögel Afrikas' (i. p. xc), "the breeding-time of African birds coincides in general with the rainy season." This is no doubt true of most parts of the Ethiopian Region, where the dry season is more pronounced than in the locality of which I treat. In most parts, as we read in books of travel, the vegetation becomes largely dried up, so that much of the food-supply of the birds is cut off. At such a time breeding would naturally cease. In the shorter and partial dry seasons of Southern Kamerun, however, the forest keeps the ground always moist, and fruits and insects are always to be found.

It is a fact correlated to that of the more or less continuous breeding of the birds here that they seldom lay more than two or three eggs at a time, and that some seem to lay only one at a time. When only two young are hatched in each brood, with all the enemies they have and the risks they run, more broods have to be produced in a year than when four or five are hatched.

There is an interesting correspondence in the life of the plant-world in this country with the irregularity we find in the breeding and moulting times of birds. Many trees and plants flower and fruit more or less at all seasons; many trees shed their leaves continually; and those species which seem to have special fruiting and leafing times do not shew regularity in regard to those times in all individuals.

XXVIII.—*Additional Notes on the True Pheasants* (Phasianus). By SERGIUS A. BUTURLIN, F.M.B.O.U.

DURING the four years since the publication of my paper on the True Pheasants ('Ibis,' 1904, pp. 377–414) several new forms have been described and some important additional material has been examined; moreover, an interesting paper on the subject, by Messrs. S. Alphéraky and V. Bianchi *, has been published. These much-esteemed and careful writers have properly pointed out some of my errors, and have in certain respects materially improved our knowledge of this difficult group of birds. Though I cannot accept many of their views, it would be out of place to enter into detailed criticism here, as their work is written in Russian, and in the same language I will review it.

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* "Preliminary Notes on Forms of the Genus *Phasianus* s. str.," in Ann. Mus. Zool. Acad. Imp. St. Pétersb. t. xii. 1907 (actually published in 1908), pp. 425–462.

Now I will speak shortly about such forms as have been newly described since 1904, or were insufficiently treated in my first paper, and will add a newly-arranged table for the identification of these birds, as my table of 1904 is now out of date.

1. PHASIANUS TSHARDJUENSIS, n. sp. (*Chardjui Pheasant.*)

Phasianus tshardjuensis P. principali proximus, tectricibus alarum albis, pectore juguloque marginibus plumarum purpureo-rubris latissimis (circa 3 mm.), scapularibus aureis marginibus nigris latis (circa 1–2 mm.); interscapulio aureo-flavo, parte anteriore lata prope auchenium purpureo-rubro valde imbuto, marginibus plumarum maculisque triangularibus apicalibus nigris latis cohærentibus, uropygio autem cupreo-purpureo-rubro valde distinguendus.

Hab. prope Tshardjui in Bochara, januario 1905 a dom. Petersen lectus; in Mus. Car. Haraldi V. Loudon in Lisden prope Wolmar, Livonia, conservatus (mares duo ad.).

This short diagnosis is sufficient for the identification of the bird, but it is advisable to give a somewhat fuller description. Head and neck of a rich glossy green with bluish and violet reflections; no external traces of a white collar. Mantle fiery- or orange-golden (brighter than in *P. principalis* and *P. zerafshanicus*), but the uppermost part of the back, near the green parts of the neck, largely suffused with purplish red, just like the chest (in *P. principalis*, *P. zarudnyi*, and *P. zerafshanicus* all the uppermost back is golden, wholly or nearly without purplish-red). Feathers of the upper back with very broad glossy black side-margins and apical wedges, obviously confluent (in *P. principalis* and *à fortiori* in *P. zerafshanicus* these markings are narrower and the side-markings quite—or nearly—interrupted near the end of the feather, thus not uniting—or very narrowly so—the apical wedges). Scapulars glossy fiery-golden, inner creamy-white and black pattern divided by a narrow U-shaped black line from the golden marginal part of the feathers concealed by overlying feathers; most of them not only spotted apically but also margined broadly—about 1–2 mm.—with glossy black (in *P. zarudnyi*, *P. zerafshanicus*, and *P. gordius* scapulars with no, or quite obsolete, black margins). Rump and upper tail-coverts dark purplish coppery-red (in *P. principalis* and *P. zerafshanicus* rufous brick-red).

Under parts of a light rufescent golden ground-colour (in *P. principalis* and *P. zerafshanicus* paler, nearly golden straw-yellow), flank-feathers tipped with glossy black and some of them with dark purplish red, and sides of the breast with glossy black margins. All the chest- and most of the breast-feathers very broadly margined with purple-red, these margins being about 3 mm. broad on the middle of the chest (in *P. principalis* somewhat narrower, about 2–2½ mm., and in *P. zerafshanicus* very much narrower, about 1 mm., but in *P. gordius* still broader, about 3–4 mm.). Belly rusty brown, edged above by glossy purplish. Lesser and median wing-coverts white.

This description is based on two adult male specimens procured in January 1905 by Mr. Petersen in the Oxus Valley near Chardjui in Middle Bokhara, and now in the possession of my friend Baron Harald V. Loudon in Lisden, near Wolmar. This species evidently inhabits the parts of the middle Oxus Valley higher up the river than *P. zarudnyi* of Khiva and Lower Bokhara, and lower down than *P. gordius*, which is met with in the mountainous parts of Bokhara.

2. Phasianus gordius. (*Karnas Pheasant.*)

P. principalis: 1908, Alphéraky and Bianchi, Ann. Mus. Zool. Ac. St. Pét. xii. p. 440.

This bird, named by Messrs. Alphéraky and Bianchi after the mythical King Gordius, is known from a single adult male specimen shot on the 5th (17th) February, 1899, by Mr. Iljinykh at Karnas, some 50 miles from Karki higher up the river Oxus, and procured by S. N. Alphéraky through Th. C. Lorenz, of Moscow. It is now deposited in the Academical Museum of St. Petersburg.

The authors give no description, but only a short diagnosis stating that this bird is collarless, has broad (about 3 mm.) purple margins on the chest and no black margins on the scapulars. These characters fit collarless specimens of *P. zarudnyi* * as well, but on examining the type specimen I find that it evidently forms a well-marked species of the purplish-breasted group of Pheasants, only resembling *P. tshardjuensis* in the purplish-red colouring of the chest extending to the uppermost part of the back and quite superseding there the golden ground-colour. From *P. tshardjuensis P. gordius* differs in having most of the scapulars without any black margins, only with apical spots, and in having the purplish red colouring still more largely developed on the feathers of the upper back, as well as on those of the chest, breast, and sides.

This bird inhabits the Oxus Valley in Upper Bokhara higher up the river than *P. tshardjuensis*, presumably between Karki and Kelif and perhaps somewhat higher up.

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* I mean the true *P. zarudnyi* Buturl. (=*P. medius* Zarudn. 1896—not "1906," by the way, as quoted by Messrs Alphéraky and Bianchi—*nec* Milne-Edw. 1870), a bird with *broad* purple feather-margins on the chest and breast. Messrs. Alphéraky and Bianchi's (*l. c.* pp. 430, 436) diagnosis of "*P. zarudnyi*" exactly fits specimens of *P. zerafshanicus* with normal breast-colouring (*narrow* purplish margins and *no* black apical shaft-streaks) and less developed collar; and their diagnosis of *P. zerafshanicus* fits such specimens of this last species that have more developed collar, but are aberrant in the chest- and breast-colouring (having apical black shaft-streaks, an exceptional feature in all this group of Pheasants but sometimes developed in specimens of the Zerafshan bird). Does "*P. zarudnyi*" apud Alphér. and Bianchi mean some undescribed form with narrow chest-margins (as may be presumed from the *habitat* given by them—"Termez" on the Amu-daria in Upper Bokhara, where true *P. zarudnyi* is not likely to occur), or only a synonym of *P. zerafshanicus* (as may also be presumed from the fact that the sportsmen from the Oxus Valley often label their specimens "Amu-daria," though in fact they are procured on Zerafshan, some hours off by rail, *fide* Bar. Har. V. Loudon)? I cannot decide this point now, but their bird is not the bird named "*P. zarudnyi*" by me.

3. PHASIANUS MONGOLICUS. (*Kirghiz Pheasant.*)

P. mongolicus Brandt, Bull. Ac. Sc. S. Pét. iii. p. 51 (1844).

P. semitorquatus: 1875, Sewertzow, Ibis, 1875, p. 491.

P. mongolicus semitorquatus Buturlin, Ibis, 1904, p. 396.

P. mongolicus mongolicus: 1908, Alphéraky and Bianchi, Ann. Mus. Zool. Ac. St. Pétersb. xii. p. 443.

Messrs. Alphéraky and Bianchi point out that "*P. semitorquatus*" of Dr. Sewertzow is based on a skin of a not quite adult and badly prepared bird, but that other specimens from Dzungaria are in all respects identical with the birds of the Central Tian-shan and of the basins of the Issyk-kul, Balkhash, Ala-kul, and Zaisan-nor, though of course different from *P. turcestanicus* of the Syr-daria basin.

I accept (*tacito consensu*) this view of the latest investigators, until I am able to compare a good series of these birds from different localities.

4. PHASIANUS SÜEHSCHANENSIS. (*Sze-chuan Pheasant.*)

P. süehschanensis: 1906, Bianchi, Bull. Ac. I. Sc. St. Pétersb. v. ser. t. xxiv. n. 1–2, p. 83; 1908, Alphéraky and Bianchi, Ann. Mus. Zool. St. Pet. xii. p. 446.

This species was discovered by M. M. Berezowsky at Sungpan in Süeh-shan, Northern Sze-chuan (Sz'tschwan). A pair (♂, 7/19 May, 1894; ♀, 17/29 June, 1894) is in the Academical Museum of St. Petersburg, while the third specimen, a male, was procured by the Hon. W. Rothschild.

The bird was described and named under the impression that *P. elegans* Ell. presents a scaled appearance of the scapulars, as in *P. decollatus* Swinh. and *P. strauchi* Przev. (and many others), from the inner buffy V- or U-shaped band being externally visible on most of these feathers, whereas in Sungpan specimens the scapulars when in natural position present a uniform general aspect as in *P. vlangalii* Przev. or *P. tarimensis* Pleske. The chest and middle of the breast of this bird is metallic green, as in *P. vlangalii* Przev. and *P. elegans* Ell., and the general colouring rich coppery-chestnut, resembling that of *P. strauchi* Przev. and *P. elegans* Ell.

Now Mr. H. E. Dresser has sent me, with his usual kindness, an elaborate description (all published descriptions and figures being somewhat contradictory and not quite sufficient) made by him in the British Museum of the type specimen of the *P. elegans* of Elliot (labelled "♂ type. Sechuen, 72. 10. 30. 1, *J. J. Stone*"), and also of Wallis's specimen from the Shan States. Comparing this description with Dr. Bianchi's description of his *P. süehschanensis* and my own notes made from the type of this last species, I see that Mr. Stone's and Mr. Berezovsky's specimens are in fact as similar in the pattern of the scapulars as in other particulars of general coloration. But *P. elegans* has somewhat paler tips to the feathers of the mantle, and, as it seems, no dark apical shaft-streaks at all on the feathers of the upper back. In *P. süehschanensis* these black (metallic-green or blue) wedge-shaped shaft-streaks are, on the contrary, very well developed, being about 10 mm. long and 4 mm. broad in the middle of the interscapulary region*. Therefore *P. süehschanensis* Bianchi is quite a good species of Northern Sze-chuan (nearest to *P. vlangalii* of Eastern Tsaidam, but much darker), though its original diagnosis fits *P. elegans* as well.

5. Phasianus strauchi. (*Strauch's Pheasant.*)

P. holdereri: 1901, Schalow, J. f. Orn. 1901, p. 414 (*nec* Buturlin, Ibis, 1904, pp. 384, 406).

Ph. decollatus strauchi: 1908, Alphéraky and Bianchi, *l. c.* p. 447.

Messrs. Alphéraky and Bianchi were able to examine, through the kindness of Dr. A. Reichenow, the type specimen of "*P. holdereri*" of Schalow from Min-Tschou, South-eastern Kan-su, and find that it is quite a typical *P. strauchi*, and that the original description and especially the figure of *P. holdereri* are very misleading. Therefore *P. strauchi* inhabits not only South-western, but all Southern Kan-su. Dr. Schalow was evidently led astray by the presence of traces of a white collar, and therefore compared his Min-tschou specimen with what he named "*P. torquatus.*" Messrs. Alphéraky and Bianchi quite justly point out that the presence or absence of the collar is a very variable feature in large series of *P. strauchi*, but that white or whitish eyebrows is a more reliable character: it is always quite absent in western forms (*P. vlangalii, P. strauchi, P. decollatus, P. elegans*, &c.), but always present, if only in slight traces, in more eastern forms (*P. satscheuensis, P. alpherakyi, P. gmelini, P. formosanus*, &c.).

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* These black wedges, present in all species of true Pheasants except *P. elegans*, are, of course, mentioned in Dr. Bianchi's very full description, but omitted in the diagnosis and tables.

In my paper on the Pheasants ('Ibis,' 1904, p. 407) I was led by its description and figure to wrongly identify with "*P. holdereri*" two birds of the St. Petersburg Museum (from Kuku-Khota and from Uliassutai). But these two birds actually belong to *P. kiangsuensis*, as the differences between them (shades of rump-colouring, wing-coverts, and nape) and the North-east Chinese Pheasant seem to be only individual. Besides "*P. torquatus* var. C" of David and Oustalet, which I took to be synonymous with "*P. holdereri*," may be *P. decollatus berezowskii.*

6. PHASIANUS STRAUCHI SOHOKHOTENSIS, nov. subsp. (*Kozlov's Pheasant.*)

P. decollatus strauchi: 1906, Bianchi, Bull. Ac. Sc. St. Pét. v. ser. xxiv. t. n. 1 & 2, p. 90 (in Russ.) (pt.: "var. from Soho-choto ad ped. sept. jug. Nan-Schan"); 1908, Alphéraky and Bianchi, l. c. p. 448 (pt.) (nec Przew.).

Phasianus strauchi sohokhotensis *P. strauchi* similis, uropygio olivascente-cyaneo plumis filiformibus extimis aurantiacis, superciliis albicantibus nullis, jugulo medio non viridi, parte anteriore interscapulii æneo-rubra, strigis apicalibus triangularibus metallice nigris angustis ornata,—sed lateribus corporis aureo-rufis (vel aureo-ferrugineis), non æneo-rubris, maculis nigris apicalibus angustioribus distinguendus; in oase Soho-Choto ad urbem Tshen-fan in parte meridionali deserti Alaschanici januario 1900 a cl. P. K. Kozlow lectus.

Kozlow's Pheasant differs from typical *P. strauchi* in having paler sides to the body, with the dark apical bands of the feathers of these parts not occupying all the width of the feathers, and in having a more golden, less coppery sheen on the upper back. Specimens of this bird were procured by Col. P.K. Kozlow, 10–12 (22–24) Jan., 1900—five males and two females—in the southern part of Alashan, in the oasis of Soho-Khoto near Tshen-fan, some 100 kilom. from the *northern* slopes of the Eastern Nan-Shan.

Dr. V. L. Bianchi first pointed out the distinguishing characters of this form, but took it for an individual variety of *P. strauchi.* The following facts, however, prove, as it seems to me, that this bird is a geographical representative of *P. strauchi.* *P. sohokhotensis* is met with *north* of Nan-Shan, where not a single specimen of typical *P. strauchi* has been procured, though Alashan has been well explored zoologically by Przevalski, Kozlov, and others. On the other hand, south of Nan-Shan, in the valleys of Tatung and Buhuk-gol, on the Amdos Plateau, and in Southern Kan-su, where typical *P. strauchi* abounds and was obtained by Abbé David, Przevalski, Holderer, and Kozlov in very large series, no one has met with *P. sohokhotensis.*

Between the two areas mentioned, on the northern slopes of the Northern Tatung range, intermediate specimens, though much nearer to typical *P. strauchi,* are met with (two males and one female, 10–11 Febr., 1900, Yarlyn-gol, by Col. Kozlov). Therefore I treat Kozlov's Pheasant as only a subspecies or geographical race of *P. strauchi.*

Dr. Bianchi points out (1907, Aves exped. Kozlowi, p. 200) that one specimen from Northern Sze-chuan (Hwo-zsi-gou, north from Lun-ngan-fu, 9 Jan., 1894, procured by M. M Berezowski) is very near to Soho-Khoto specimens. I think that this does not prove *P. sohokhotensis* to be only an individual variety of *P. strauchi,* as in Sze-chuan, as well as in Soho-Khoto, typical *P. strauchi* is evidently not met with *, and Dr. Bianchi himself admits that the range of

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* Messrs Bianchi and Berezowski (Aves exped. Potanini, 1891, p. 18) mention *P. strauchi,* one specimen, from the river Hei-ho, at Nan-pin, N. Sze-chuan, July 1885. But Nan-pin is situated near the limits of Kan-su, nearly 50′ north of Lun-ngan-fu, and, moreover, in 1891 these authors did not clearly distinguish between *P. strauchi* and the allied forms. This specimen is not now in the St. Petersburg Museum.

Kozlov's Pheasant may border the range of typical *P. strauchi* in a broad semicircle, from Soho-Khoto in the north-east, through Western Shensi in the east to Northern Sze-chuen in the south-east. But I must add that in his other work (1906, Bull. Acad. St. Petersb, v. ser. xxiv. t. n. 1 & 2, p. 90) Dr. Bianchi quotes this single Hwo-zsi-gou specimen as "*P. berezowskii*" variety of *P. decollatus*, not as a variety of *P. strauchi*, and this identification seems to be the more correct.

7. Phasianus decollatus berezowskyi. (*Berezowsky's Pheasant.*)

P. berezowskyi: 1901, Rothschild, B. O. C. xii. p. 20.

P. decollatus, var.: 1906, Bianchi, Bull. Acad. St. Pet. v. ser. xxiv. t. n. 1 & 2, pp. 83, 90; 1907, Bianchi, Aves exp. Kozlowi, p. 201 (*var. indiv.*).

P. decollatus decollatus: 1908, Alphéraky and Bianchi, l. c. p. 451 (nec Swinh.).

Messrs. Alphéraky and Bianchi, in the work just published, treat *P. berezowskii* as an individual variety of *P. decollatus*, saying shortly that this fact is proved already in Dr. Bianchi's 'Aves expeditionis Kozlowi' (in Russian). In this last-named work Dr. Bianchi states that *P. berezowskii* can be considered only as an individual variety, not a geographical form of *P. decollatus*, as it has no separate range, typical *P. decollatus* being met with not only to the south of the so-called *P. berezowskii*, but also far to the north, in the central parts of the Alashan range.

I must confess that when, in 1906, I looked through the series of collarless Pheasants in the St. Petersburg Museum with Dr. Bianchi, I was rather inclined to share this conclusion from the facts we had before our eyes, and reluctantly to admit a case of dimorphism not known in other species of Pheasants. But the basis of our conclusion, the fact—as we thought then—that *P. decollatus* inhabited the Central Alashan Mts., proved to be our own error. The Alashan bird is, in fact, extremely like typical *P. decollatus* in general appearance and was identified as such in 1906 and 1907 by

Dr. Bianchi, but nevertheless it belongs to quite a different section of the genus, always having white eyebrows, and therefore was named as a new form *P. alaschanicus* by Messrs. Alphéraky and Bianchi themselves (1908, l. c. pp. 434, 452). And it is somewhat startling that these esteemed zoologists wish to retain their conclusions after they have withdrawn as erroneous the only facts on which these conclusions were based.

As a matter of fact, and after examining the Kan-su specimens of M. M. Berezowski in the Irkutsk Museum in 1905, I can state that typical *P. decollatus* is up to now known only from South-eastern Sze-chuan (Chung-king, Swinhoe's specimen), western part of Central Sze-chuan (Ta-tsian-lu, Pratt's specimens), and, it seems, from Western Quei-Chow and North-eastern Yunnan (according to Abbé David). As David and Oustalet did not distinguish between *P. decollatus* and *P. strauchi* (and *P. berezowskii*, of course) and give the figure of *P. strauchi* (Ois. Chin. pl. 100) under the name of *P. decollatus*, their other statements must be rejected. No specimens of *P. decollatus typicus* are known from Northern Sze-chuan or further north. *P. berezowskii*, being, it seems, only a local race—a darker northern race—of *P. decollatus*, was collected by M. M. Berezowski in South-eastern Kan-su (Hui-tsian) and in Northern Sze-chuan (village of Mu-gua-chi in Hwo-tsi-gou Valley, 30 April, 1893, and perhaps, as stated above, another specimen, from another part of Hwo-zsi-gou, 9 Jan., 1894). Some, if not all, Sin-ling and Southern Shensi specimens of "*P. torquatus* var. C" and of "*P. decollatus*" of David and Oustalet must belong to this form.

Therefore *P. berezowskii* and *P. decollatus* are not met with together and are distinct northern and southern forms of one species. But Berezowski's Pheasant lives often side by side with *P. strauchi*, as the latter is common not only in South-western Kan-su, where *P. berezowskii* is not yet known, but in South-eastern Kan-su as well (Min-tschou type of *P. holdereri* of Schalow, and still further east, Hoi-sian or Hui-tsian, just the home of the type specimen of

P. berezowskii). For *P. strauchi* with its paler northern subspecies *P. sohokhotensis* and *P. decollatus* with its darker northern subspecies *P. berezowskii* are quite specifically distinct, and *P. berezowskii* does not form a connecting-link between them, though it is paler than *P. strauchi* and somewhat darker than *P. decollatus*. In the pattern of its side-feathers it is a true "*decollatus*," having them narrowly tipped with black, whereas in *P. strauchi* these black bands occupy the whole width of the feather. And in some respects *P. berezowskii* is even more different from *P. strauchi* than *P. decollatus*. I mean that the black wedge-shaped apical spots on the feathers of the upper back, that are narrow in *P. strauchi* (and *P. sohokhotensis*), are wide in *P. decollatus*, and wider still in *P. berezowskii*. The scapulars in *P. berezowskii* are also somewhat paler than in *P. decollatus*, and not darker. Perhaps it may prove better to treat it even as quite distinct specifically, though the differences from *P. decollatus* are rather those of quantity.

8. PHASIANUS ALASCHANICUS. (*Alashan Pheasant.*)

P. torquatus: 1891, Berezowski and Bianchi, Aves exp. Potanini, p. 18 (pt., *nec* Gm.).

P. decollatus: Bianchi, 1906, Bull. Ac. Sc. St. Pet. v. ser. xxiv. t. n. 1 & 2, p. 90 ("typicus"!); 1907, Aves exp. Kozlowi, p. 200 ("quite typical") (partim, *nec* Swinhoe).

P. alaschanicus: 1908, Alphéraky and Bianchi, l. c. pp. 434, 452.

A pair of these birds was procured by Col. N. M. Przewalski in January 1884 in an oasis near the western slopes of the central parts of the Alashan Range, in South-eastern Alashan.

P. alaschanicus bears a striking similarity to *P. decollatus* in general appearance, but belongs to quite another section of the genus, having always clearly discernible traces of whitish eyebrows. It has a slight white collar embracing about two-thirds of the neck, but this character does not always distinguish it from *P. strauchi* and the *P. decollatus* group, as in this last group—as proved by large series of *P. strauchi* in the St. Petersburg Museum—the collar is occasionally just as well developed (though never to such a degree) as in *P. gmelini*, *P. karpowi*, &c.

9. PHASIANUS GMELINI KIANGSUENSIS. (*North-east Chinese Pheasant.*)

P. holdereri kiangsuensis: 1904, Buturlin, Ibis, pp. 383, 407 (Kalgan spec.).

P. holdereri: 1904, Buturlin, l. c. p. 406 (pt., Kuku-Khota and Uliassutai specimens; nec Schalow, 1901).

P. schensinensis: 1905, Buturlin, Psovaia i Ruzheinaia Okhota, Febr., p. 50 (in Russian) (ex litt.) (Kuhu-Khota and Uliassutai spec.).

P. gmelini pewzowi: 1908, Alphéraky and Bianchi, l. c. p. 456 (Kuku-Khota and Kalgan spec.).

When treating the bright-coloured narrow-collared Pheasant of North-eastern China in my previous paper I made several mistakes, as has been justly pointed out by Messrs. Alphéraky and Bianchi.

My first mistake was in tracing the geographical limit between the bright-coloured northern *P. kiangsuensis* and the pale-coloured southern *P. gmelini*. My type specimens of *P. gmelini* came from Foo-chow in Fo-kien, Southern China, and *P. kiangsuensis* was described by me from Kalgan specimens in Northern China (Dr. Radde's specimens were actually examined by me, and Mr. Lorenz's specimens were quite correctly described by him for me *in litt.*). From the wide stretch of country between these localities (about 15°) I had no specimens, and from the description of Shanghai specimens I erroneously admitted them to belong to the bright northern race. But Messrs. Alphéraky and Bianchi were able, through the kindness of Mr. Rothschild and Dr. Hartert, to examine several specimens from Shanghai and Ching-kiang, and found them to belong to the pale southern race—and I concur in this opinion, as I have now examined these birds myself. Therefore the limit between the two forms lies much more to the north than I assumed, and it is not improbable that all the lowlands of Eastern China (Lower Hoang-ho included) are inhabited by the paler southern race *P. gmelini.* It was, of course, not a happy inspiration to name the bright race *P. kiangsuensis*, as it now proves not to extend its range into the Kiang-su province, but it cannot be helped, and as *Squatarola helvetica* does not breed in Switzerland and *Xylocopus kamtchatkensis* is never met with in Kamtchatka, the error will not remain unique.

My second mistake, as it seems, was in further subdividing the bright-coloured more northern bird into two forms on the ground of characters that do not hold good in a larger series—at least most of them,—as Messrs. Alphéraky and Bianchi point out, and as I am now myself convinced.

My *P. kiangsuensis* was actually based on birds of the north-western mountainous part of the north-eastern provinces of China (Pe-chi-li and Shan-si), which were brought from Kalgan. But brightly coloured specimens of North-eastern Ordos (M. V. Pewzow's specimens: S.W. from Kuku-Khota, near the N.E. bend of the Hoang-ho and Uliassutai) differed, as it seemed to me, in having sandy-grey (not lavender-grey) wing-coverts, a more greenish rump, a more glossy nape, and more dingy superciliaries. I identified these Ordos birds with *P. torquatus* var. C (of David and Oustalet's well-known work) of Shensi, and therefore named them in my letters and manuscript map of Geographical Distribution of true Pheasants "*P. schensinensis*," as mentioned in the Russian edition of my first paper on Pheasants. Later on I identified them with "*P. holdereri*" of Schalow, and described them under that name.

Both these identifications were incorrect, as "*P. torquatus* var. C" is most probably *P. berezowskii* and "*P. holdereri*" is typical *P. strauchi*. Further, the more lavender or more sandy-tinged grey colouring of the wing-coverts as well as the more greenish rump are purely individual features, as may be seen in a large series of almost every species of the eastern group of true Pheasants. The narrowness of the eyebrows is also to some extent due to abrasion of the feathering. And, lastly, the shades of nape-colouring also seem to present no well-defined line of demarcation.

I may add that in the Ordos specimens of Col. Pewzow—types of my *P. schensinensis* and *P. holdereri*—the chest-feathers are conspicuously, though very narrowly, margined with black, and in Radde's specimen—type of my *P. kiangsuensis* (which I still presume to be of Kalgan origin)—these margins are nearly obsolete. But as other Kalgan specimens examined by myself in Mr. Alphéraky's collection possess these margins, the character seems to be of no value in this form also.

Therefore in this group of Pheasants we must now admit two forms: the more southern *P. gmelini*, having the "mantle and flanks golden-yellow" ('Ibis,' 1904, p. 384) ("coloribus corporis valde pallidioribus," ib. p. 409), and the more northern *P. kiangsuensis* of N.E. Ordos and Kalgan, with the "mantle and flanks golden-orange" ('Ibis,' 1904, p. 384) ("coloribus corporis intensis," ib. p. 408). Messrs. Alphéraky and Bianchi have given to this form a new name "*P. pewzowi*," based on the Ordos specimens of Col. Pewzow, identical, as they admit, with Kalgan birds, and I am very sorry that this much more appropriate name must be rejected on the ground of priority.

10. PHASIANUS KARPOWI BUTURLINI. (*Tsushima Pheasant.*)

P. torquatus: 1882, Blakiston and Pryer, Trans. As. Soc. Jap. x. p. 127 (nec Gm.).

P. karpowi buturlini: 1907, Austin H. Clark, Proc. U.S. Nat. Mus. xxxii. p. 468.

This bird is based on a single male specimen obtained on May 21st, 1885, by the late P. L. Jouy, on the island of Tsushima in the Korean Straits. It was compared with a good series (seven males) of true *P. karpowi* from Korea (Corea), and is said to differ in having paler mantle and flanks, broader superciliaries, more greyish rump, more olive and less yellowish central rectrices not so heavily barred toward the tips, and slightly shorter and more arched bill.

Most of these characters, such as the form of the bill and the amount of grey on the rump, and, still more, the amount of barring *on the apical half* of the tail-feathers, are purely individual features in true Pheasants. But the shade of the mantle and flanks and the form of the superciliaries are true diagnostic characters. In these respects *P. buturlini* evidently comes somewhat near *P. ussuriensis,* and it will be advisable to compare carefully the Tsushima bird with specimens from Ussuri-land, and with *P. gmelini* of South-eastern China as well.

This form is *not* known to me *ex autopsiâ.*

I now give a List of the species and subspecies of *Phasianus*, with the dates of the publication of the names and short indications of their ranges, and add a synoptical dichotomous Table for the identification of the adult males. Both in the List and in the Table the sequence of forms is that of their natural affinities, so far as I understand them.

This new table of identification seems desirable, as two forms (*P. semitorquatus* and *P. holdereri*) were excluded from my first list of true Pheasants, and six forms (*P. tshardjuensis, P. gordius, P. süehschanensis, P. sohokhotensis, P. alaschanicus,* and *P. buturlini*) are now added. Moreover, in my previous attempts to diagnose the true Pheasants I did not always use the best and most constant specific characters.

I find it useless to include in my List or in the Table such somewhat aberrant forms of True Pheasants as Reeves's Pheasant of Central Asia and the Japanese Copper Pheasants (*P. sœmmerringi, P. scintillans, P. ijimæ*), as I have nothing to alter in my previous account of them, but only wish to state that my description of the female *P. sœmmerringi* ('Ibis,' 1904, p. 413) was based, it seems to me now, on a wrongly identified specimen of a female *P. versicolor*.

List of the True Blue-and-Green-headed Pheasants.

1. *P. colchicus septentrionalis* Lorenz, 1888. North Caucasus.
2. *P. colchicus typicus* Linn., 1758. Western Transcaucasia.
3. *P. colchicus lorenzi* Buturl., 1904. Kura Basin.

4. *P. talischensis* Lorenz, 1888. S.W. and S. coast of the Caspian Sea.
5. *P. persicus* Severtz., 1875. S.E. Caspian coast.
6. *P. principalis komarowi* Bogdan., 1886. Tejend Basin.
7. *P. principalis typicus* Sclater, 1885. Murghab Basin.
8. *P. principalis zarudnyi* Buturl., 1904. Upper Khiva, Lower Bokhara.
9. *P. tshardjuensis*, n. sp. Oxus Valley near Chardjui, Middle Bokhara.
10. *P. gordius* Alph. et Bianchi, 1908. Oxus Valley near Karnas, Upper Bokhara.
11. *P. zerafshanicus* Tarnovski, 1891. Zerafshan Valley.
12. *P. chrysomelas typicus* Severtz., 1875. Khiva.
13. *P. chrysomelas bianchii* Buturl., 1904. Upper Oxus Basin.
14. *P. shawi* Elliot, 1870. Upper Tarim Basin.
15. *P. mongolicus turcestanicus* Lorenz, 1896. Syr-Daria Basin.
16. *P. mongolicus typicus* Brandt, 1844. From Karatau to the Great Altai.
17. *P. tarimensis* Pleske, 1888. Lower Tarim Basin.
18. *P. vlangalii* Przev., 1876. Eastern Zaidam.
19. *P. süehschanensis* Bianchi, 1906. Northern Sze-chuan.
20. *P. strauchi typicus* Przev., 1876. Amdos Plateau; Southern Kan-su.
21. *P. strauchi sohokhotensis*, subsp. nov. Oasis of Soho-khoto in Southern Alashan.
22. *P. decollatus berezowskii* Rothsch., 1901. Southern Kan-su and Northern Sze-chuan.
23. *P. decollatus typicus* Swinhoe, 1870. Southern and Central Sze-chuan.
24. *P. alaschanicus* Alph. et Bianchi, 1908. Eastern Alashan.
25. *P. satscheuensis* Pleske, 1892. The Oasis Sachjow on the northern slope of the Nan-Shan, in Central Gobi.
26. *P. formosanus* Elliot, 1870. Formosa.
27. *P. gmelini typicus* Buturl., 1904. S.E. China, south to Canton, west to the Ichang Gorges, north to Hoang-ho.
28. *P. gmelini kiangsuensis* Buturl., 1904. N.E. China: Ordos, Kalgan.
29. *P. karpowi typicus* Buturl., 1904. Corea, Southern Manchooria.
30. *P. karpowi buturlini* Clark, 1907. Tsu-shima Isl.
31. *P. alpherakyi ussuriensis* Buturl., 1904. Ussuri-land.
32. *P. alpherakyi typicus* Buturl., 1904. Central and Northern Manchooria.
33. *P. hagenbecki* Rothsch., 1901. Kobdo.
34. *P. elegans* Elliot, 1870. S.W. Sze-chuan, W. Yunnan, N. Shan States.
35. *P. versicolor* Vieill., 1825. Japan (except Yezzo).

Characters of the Adult Males of the Blue-and-Green-headed Pheasants.

I. Middle of the rump and of the upper tail-coverts of a coppery red or rusty orange or buff ground-colour, though sometimes tinged with green or glossed with oily green (dark bars on basal half of tail mostly, not always, very narrow, about 2 mm. —0·1 in.—or less).

A. Scapulars scaled, as on many of these feathers, inner creamy or pale buff pattern variegated with black and divided by a black U-shaped line from the coppery-red or Indian-red margin is plainly visible (never white collared; rump coppery red; chest- and breast-feathers margined with bluish or greenish black).

a. Lesser and median wing-coverts sandy brown; mantle, breast, and flanks darker, more rufescent golden.

α. Chest-feathers only rounded and less emarginated, their black margins much wider than 1 mm. (0·04 inch), even up to 2–2½ mm. (0·1 in.).

a′. Belly blackish brown, always margined above with glossy dark green or blue-green.

α′. Black markings of mantle and breast with greenish gloss; general colouring somewhat paler, more golden red .... *septentrionalis.*

β′. Black markings of mantle and breast with blue or violet gloss prevailing; general colouring somewhat darker, more coppery red .... *colchicus.*

b′. Belly chocolate-brown (and margined above with glossy coppery red in typical birds of Kura Valley, but with glossy greenish in some birds from Alaschan) .. *lorenzi.*

β. Chest-feathers somewhat more pointed and more deeply emarginated, their black margin narrower than or about 1 mm. (0·04 inch) (belly margined above with glossy coppery red) .... *talischensis.*

b. Lesser and median wing-coverts buffy white; back, flanks, and breast with more golden-yellow ground-colour (belly edged above with purple-red; chest-feathers somewhat pointed and deeply emarginated, their black margin narrow, not broader than ½ mm., 0·02 inch) .... *persicus.*

B. Scapulars, when undisturbed, quite uniformly coloured or variegated only with black apical edges and spots, as wide glossy coppery red or golden margins of these feathers alone are naturally visible, inner creamy or buffish and black pattern being somewhat visible, if at all, on very few of them.

c. Lesser and median wing-coverts more or less white (sometimes greyish or buffish tinged); upper tail-coverts with little if any admixture of green in the copper-red or rusty general colouring.

γ. White collar absent or at least not more than 5 mm. (0·2 inch) wide; mantle largely of a golden ground-colour; middle chest-feathers conspicuously margined with purplish red or with glossy black.

c′. Most feathers of middle breast and chest purple-, not black-margined.

γ′. Uppermost part of back golden yellow, as the rest of the mantle, not or very slightly purplish-glossed.

a″. Scapulars widely margined apically with black (mantle and flanks pale golden yellow; rump brick-red; purplish margins of chest-feathers about 2½ mm., 0·1 inch, wide).

α″. Black markings of mantle and flanks with green gloss prevailing. *komarowi.*

β″. Black markings of mantle and flanks with blue gloss prevailing.. *principalis.*

b″. Scapulars not margined, but only tipped with black.

γ″. Chest-feathers widely margined, about 2½ mm. (0·1 inch), with purple-red; black markings of mantle and flanks with green gloss prevailing; generally only traces of collar present .... *zarudnyi.*

δ″. Purple-red margins of chest-feathers only about 1 mm. (0·04 inch) wide;

black markings of mantle and flanks with blue gloss prevailing; white collar, though narrow, nearly always uninterrupted behind and on sides of the neck (chest- and breast-feathers sometimes with dark apical shaft-streaks)........ *zerafshanicus.*

δ'. Uppermost part of back differs from the golden parts of the mantle in being strongly suffused with purple-red, as is the chest (purple-red margins of chest-feathers are 3 mm. ($\frac{1}{8}$ inch) or more wide); general colouring intense, fiery- or orange-golden; rump coppery red; collar quite absent or slight traces of it.

c''. Scapulars apically widely margined with black; purplish colouring less developed, margins on middle of chest about 3 mm. (0·11 inch) broad. *tshardjuensis.*

d''. Scapulars with no or nearly no black margins, only tipped black; purplish colouring more developed, margins on middle of chest about $3\frac{1}{2}$ mm. (0·14 inch) broad .... *gordius.*

d'. Chest- and breast-feathers all margined with glossy black.

ε'. Upper back and breast very widely margined with black, so that on the back black about equals the golden ground-colour; long flank-feathers are simply if at all emarginated, and all the end of the feather is occupied by a black spot; dark bars on basal half of middle rectrices narrow, about 2 mm. or less (0·08 inch).

e''. Black margins of chest- and breast-feathers narrower, coppery red on breast prevailing over black (in typical specimens belly blackish brown edged above with glossy green; black markings of mantle and breast with greenish gloss; in some aberrant specimens* belly chocolate-brown edged above with coppery red; black markings of mantle and breast with violet gloss). *chrysomelas.*

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* Geographical limits not yet ascertained, as most labels are not minute and precise enough. I have seen such specimens from Nukus.

f''. Black margins of chest- and breast-feathers wider, black on breast prevailing over coppery red .... *bianchii.*

ζ'. Upper back- and breast-feathers narrowly margined with black, so that on the back golden ground-colour prevails over black; long flank-feathers are doubly emarginated, so that three apical lobes are produced, central one only (with small adjoining parts of lateral ones) being occupied by a black spot; dark bars on basal half of middle tail-feathers ordinarily (not in all specimens) are wide, about 3–4 mm. (0·12–0·15 inch) .... *shawi.*

δ. White collar always about 10 mm. (0·4 inch) wide; mantle coppery red or chestnut (with very narrow black apical shaft-streaks or spots); central chest- and breast-feathers with no dark margins or only slight traces of black ones.

η'. Collar complete or slightly interrupted in front; mantle, chest, and dark spots of flanks with bluish and violet gloss prevailing .... *turcestanicus.*

θ'. Collar more interrupted in front; mantle, chest, and dark spots of flanks with green gloss .... *mongolicus.*

d. Lesser and median wing-coverts sandy rufous; upper tail-coverts greenish buff (no collar; chest-feathers without or with slight traces of black margins) .... *tarimensis.*

II. Rump and middle tail-coverts lavender-grey, greenish grey or olive-green without red or rufous tinge, but some hair-like side tail-coverts ordinarily (one species excepted) contrastingly orange or rufous (lesser and median wing-coverts of a lavender-grey or pale sandy-ochreous ground-colour, never whitish or rufous; dark bars on basal half of middle rectrices always broad, about 3–4 mm., 0·12–0·15 inch).

C. Hair-like side tail-coverts with a rusty or orange patch; under parts with more or less whitish, golden yellow, or coppery red.

- *e*. Upper back with obvious glossy black apical shaft-streaks or wedges.
  - ε. Rich green of the neck extending uninterruptedly to the middle of chest and breast; scapulars more or less uniform, as, when undisturbed, on most feathers inner **U**-shaped creamy or buff and black pattern is covered.
    - *e′*. Mantle and sides of breast golden yellow; edges of middle rectrices violet greyish . . *vlangalii.*
    - *f′*. Mantle, sides of breast, and edges of middle rectrices with dark coppery red or chestnut largely prevailing ... . *süehschanensis.*
  - ζ. Rich green of the neck banded in front by the golden or coppery colours of the chest; scapulars scaled as on many of these feathers, inner buff or creamy and black **U**-shaped pattern is plainly visible and contrasting with maroon, reddish, or rufous margins.
    - *g′*. White collar absent, or only traces of it, or else if present it is broadly interrupted, not embracing more than two-thirds of the neck.
      - λ′. Without any traces of white eyebrow (collar variable).
        - *g″*. Upper back with coppery red prevailing over golden yellow, its feathers with narrow black apical wedges; flanks dark with broad black apical bands.
          - ε″. Upper back almost without golden-yellow sheen; sides of breast coppery red with black apical band occupying the whole width of the ends of feathers................ *strauchi*
          - ζ″. Upper back with more golden-yellow sheen; sides of breast dark golden rufous, and black apica bands occupy most, but not the whole width of the ends of feathers. *sohokhotensis.*
        - *h″*. Upper back with golden yellow far prevailing over coppery red, its feathers with wide black apical wedges; flanks pale with black apical spots occupying only the middle of the ends of the feathers.

η″. Sides of breast golden rufous; black apical wedges of upper back broader; margins of scapulars buffy rufous red .... *berezowskii.*

θ″. Sides of breast golden yellow; black apical wedges of upper back narrower; margins of scapulars darker rufous red .... *decollatus.*

μ′. White or whitish eyebrow always present, even in much abraded plumage some traces of it; (collar ordinarily present, though narrow and leaving free the whole front third of the neck).

i″. Margins of scapulars and of tertiaries dark rufous-chestnut strongly contrasting with the fiery golden of the upper back .... *alaschanicus.*

j″. Margins of scapulars and of tertiaries paler, more sandy brown with some vinous tinge, and passing gradually into the golden yellow of upper back. *satscheuensis.*

h′. White collar present and complete or only slightly interrupted, embracing much more than two-thirds of the neck; white or whitish eyebrow always readily discernible.

ν′. Flanks creamy white .... *formosanus.*

ξ′. Flanks straw-yellow, or golden, or darker still.

k″. Collar not very broad and somewhat interrupted or at least narrower in front; belly edged in front with glossy green; eyebrows dirty and narrow (narrower than diameter of the eye).

λ″. Mantle and flanks golden yellow .. *gmelini.*

μ″. Mantle and flanks golden orange.. *kiangsuensis.*

l″. Collar very broad, especially in front; belly edged in front with glossy bluish green or violet-green; eyebrows cleaner white and somewhat broader.

ν″. Mantle and flanks golden orange; eyebrow not broader than the eye-diameter; scapulars margined with dark Indian-red or intense rufous-maroon, strongly glossed apically with coppery purplish (no white post-ocular spot; chest-feathers very narrowly margined, and not to the tip, with black).

ψ. General colouring darker; eyebrows narrower; central tail-feathers more yellowish ...... *karpowi.*

ω. General colouring paler; eyebrows broader; central tail-feathers more olive .... *buturlini.*

ξ″. Mantle and flanks straw-yellow; eyebrow pure white and much broader than eye-diameter; scapulars margined with light Indian-red or even rufous-buff, and only very slightly glossed apically with coppery purplish.

φ. Chest- and breast-feathers with narrow, about ½ mm. (0·02 inch) or less, glossy black margins; black patch under the ear with a white spot; mantle somewhat tinged with golden.

1. Black margins of chest-feathers interrupted near the tip of the feather, not coalescing with the black apical shaft-streak . *ussuriensis.*

2. Black margins of chest-feathers border also their tips, thus coalescing with black apical shaft-streaks .... *alpherakyi.*

π. Chest- and breast-feathers with broad, about 1 mm. (0·04 inch) glossy black margins; black patch under the ear without white spot; mantle paler, more straw-yellow .... *hagenbecki.*

f. Upper back without glossy black apical shaft-streaks or wedges (no collar or whitish eyebrow; rich green of the neck extending to the middle of chest and breast; mantle and flanks dark golden orange with coppery-red reflections) .... *elegans.*

D. Hair-like side tail-coverts without rusty or orange patch; chest, breast, and flanks uniform dark greenish or bluish (no collar nor whitish eyebrow) .... *versicolor.*

XXIX.—*On the Russian Arctic Expedition of* 1900–1903.— Part II.* By H. E. Dresser, F.Z.S., M.B.O.U.

Tringa canutus.—The Knot was first seen in Middendorff Bay on the autumn migration. At the Sarja roadstead on the Western Taimyr it arrived from the 25th or 26th of May to the 7th or 8th of June and numbers bred there, as recorded in Dr. Walter's notes, where full particulars of the nidification of this species are given. Mr. Birulia states that the incubation-period is from 20 to 25 days. From the 19th of July to the 1st of August (new style), fully fledged young birds were seen, which, however, were not able to fly. In New Siberia in 1902 the first Knots arrived apparently in pairs, and commenced nidification at once. For the site of its nest the bird selects an elevation in the tundra, but it does not always choose a dry spot, as Mr. Birulia found one example on the Taimyr in a damp place, surrounded by pools of water. The nest is a round hollow in the turf about 11 cm. in diameter and from 7 to 8 cm. in depth, but is well lined with lichen until the depth is reduced to about 5 cm. The material consists chiefly of *Thamnolia vermicularis* or less frequently of *Dufourea arctica,* as is also the case in the nests of other Waders. These lichens, being tubular and filled with air, are especially suitable as composing an isolating layer above the frozen ground. Mr. Birulia found the first nest on New Siberia on the 20th June/6th July, containing a full clutch of four eggs much incubated, and soon afterwards he saw young birds in down. The chicks are able to run directly they are hatched, as Mr. Birulia found a nest containing the shells of three eggs and a young bird just emerging from the fourth: the three young birds were found near the nest and had evidently left it on his approach. They squat and hide immediately a stranger approaches, and assimilate so well to the surrounding lichen that it is almost impossible to discover them. When the young are hatched the old birds conduct them from the lonely elevated portions of the tundra to the valleys, where the vegetation is more luxuriant and the pools teem with insect-life and especially with gnats. Here they associate with other Waders, such as Sanderlings, Turnstones, &c. All attempts to find the nest of the Knot by watching the birds proved fruitless, as they were very shy during the nesting-season and the eggs were only found by chance. When the parent is disturbed and leaves its nest it does not return for a long time, unless the eggs are hard-set. The difficulty of finding the nest is increased by the fact that the Knot is very unsociable during the breeding-season and avoids other Waders as well as individuals of its own species. It nests in lonely places far from the sea-coast, where, in the Siberian islands at least, bird-life is chiefly concentrated. About the middle of August (old style), before the first frost, the young Knots in New Siberia began to collect in flocks, and when the first frosts set in they commenced to leave in family-parties or flocks.

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* Concluded from p. 517.

Limosa lapponica was met with on the Taimyr Peninsula, as previously stated ('Ibis,' 1904, p. 220), but was not found breeding there, though Mr. Birulia thinks that a few birds may nest on the Taimyr tundras, as on the 14th/27th August he shot one in Middendorff Bay which had an incubation-spot. On the island of New Siberia he never met with a Godwit.

Calidris arenaria.—Few of this species were seen in Middendorff Bay on passage in the autumn. It was, however, as previously stated ('Ibis,' 1904, p. 229), found breeding on the coast of the Western Taimyr, where Dr. Walter obtained its eggs and young in down. Mr. Birulia states that there it was not so common as the other Waders. On the island of New Siberia Mr. Birulia observed the first Sanderlings, migrating north, on the 23rd May/5th June, after which they were seen daily and were one of the commonest of the birds on the tundras; but in spite of every endeavour he never succeeded in finding a nest, as the birds "shewed no anxiety" and did not in any way betray the situation of their nests, while watching and waiting in the cold was most unpleasant. Only on one occasion, on the 6th/19th July, did a Sanderling exhibit any anxiety and tried to lure him away; doubtless the bird had a nest containing highly incubated eggs in the vicinity, but he did not succeed in finding it. On the 10th/23rd July he captured a family of four young birds in down. Eleven days later he caught a young bird which had the quill-feathers just appearing, and on the 26th July/8th August he obtained young birds which could just fly, after which small and then larger flocks of young birds were seen on the sand-banks, most of which had still remains of down on their heads. They are left by their parents directly they can fly, and are then not shy but can be easily approached. At the first approach of winter, on the 13th and 14th of August (new style) the last flocks were seen, but a few stragglers remained later, and the last two Sanderlings were observed near a sand-bank on the coast on the 5th of September (new style).

Strepsilas interpres was met with both on the mainland and on the island of New Siberia, where it was one of the most common of the Waders.

Grus leucogeranus.—Mr. Birulia did not personally meet with this Crane, as he only visited the Yansk district in the winter. He was informed by the natives that it occurs in small numbers every year on the Yansk tundras up to the coast of the Arctic Ocean and as far north as Cape Sviatoi Nos, as well as on the estuary of the Yana and on those of the other rivers, but breeds there very seldom, and chiefly on the border of the forest-zone. It is said, however, to breed frequently near the village of Kazatchie, and the native who gave this information said that he always found two eggs in the nest.

Somateria spectabilis.—On the Western Taimyr small flocks were seen early in June, and the first nest was found on the 22nd June/5th July. On 8th/21th August a female and two tolerably large young in down were seen. On the island of New Siberia Mr. Birulia had a better opportunity of observing the King-Eider, as it was more numerous there than on the Taimyr, and arrived earlier. He found the first nest, containing a full clutch of eggs, on the 17th/30th June. The nesting-places were on the steep banks of the tundra-lakes or else in low-lying places, usually near a river or a rivulet, both near the sea and also in the interior of the island in valleys where there are many lakes or rivers. The first nest found was in a flat low-lying mossy place near a rivulet and about a couple of feet from a small pool; it was a round depression, not deep, about 25 cm. in diameter, plentifully lined with rather coarse down, and containing six eggs but slightly incubated. When Mr. Birulia was about fifteen paces from the nest the female bird left her nest, at the same time bespattering her eggs with a liquid secretion, and ran about beating the ground with her wings. During the nesting-season the King-Eider is very unsociable and the nests are usually far apart, but on the small islands, where it is safe from the attacks of the Arctic fox, the nests are nearer to each other and it often breeds in company with Geese and Gulls. The female sits very closely, and even when kicked off her nest will try to return at once. Whilst the females are incubating the drakes may be seen in flocks of seven or eight on the small lakes near the nesting-places and not on the sea. From the 26th of July to the 8th of August flocks were seen, and even a day or two later the males had not moulted their plumage.

Somateria fischeri was seen on several occasions on New Siberia, but Mr. Birulia did not shoot it. It is rarer there than the King-Eider and was never seen in flocks, but only in pairs or two pairs together. The first pair was seen on the 28th May/10th June and the last pairs were observed on the 26th June/9th July, always on the coast or in the open sea, and Mr. Birulia never saw any trace of this duck breeding on New Siberia. The ivory merchants never met with *S. fischeri* on the islands of Liakhovski, Kotelny, or Faddeevski, and it would seem that it comes to New Siberia straight across the sea, probably from the Indighveka. It is well known to the natives of the Yansk district and nests along the entire coast of the Arctic Ocean as far west as the Lena. In the basin of the Mouksounovka river *S. fischeri* breeds on the borders of the lakes, more rarely on the islands in the river valleys, and almost always far from the sea. It does not sit so closely as *S. spectabilis* and is shy and difficult of approach. Apparently it does not arrive in the spring or leave in the autumn in large flocks, and at its nesting-place it is seen singly or in pairs.

Somateria stelleri is rare in the Taimyr: Dr. Walter obtained two males, but Mr. Birulia did not see it there. No nest was found, though it apparently breeds on the peninsula. On New Siberia Mr. Birulia first observed it on the 2nd/15th June, and only saw it on two occasions afterwards; he adds that it was even rarer than *S. fischeri*. He only shot one, a young bird, and found no trace of a nest; but the ivory merchants informed him that they occasionally found eggs on all the islands of the archipelago; anyhow, he states, the chief nesting-places of Steller's Eider are on the tundras of the mainland.

Harelda glacialis was met with commonly everywhere.

Branta bernicla was first met with in Middendorff Bay, where large flocks remained during the moulting-season. At the Sarja roadstead it was common and was found breeding on the elevated stony portions of the tundra, where it places its nest amongst the stones, filling the open places carefully with moss, constructing the nest of the same moss and lining it well with down, with which the bird covers the eggs when leaving the nest. Nests were also found in damp places near the lakes, but there, too, they were placed on heaps of stones. On the approach of anyone the male, who acts as a sentinel, utters a warning cry and the female leaves the nest, flying as near the ground as possible for some distance and then rising to join her mate. Mr. Birulia saw thousands on the Kolomeitseff River during the moulting-season, and they also appear to frequent all the other rivers at that season, which seems to extend from about the 25th of July to the 8th of August (new style), while on the 24th of August numerous flocks were seen leaving the Taimyr and passing south-west along the sea-coast.

Branta nigricans was seen in 1902 on New Siberia when it was still winter. This Goose comes to the islands of the New Siberian archipelago in larger numbers than *Anser albifrons*, but only breeds there to a limited extent. In 1902 Mr. Birulia saw large numbers during the moulting-season, but did not find a single nest, and he considered that it only comes to the islands during the moulting-season; but in 1903

Mr. Brousneff found a few birds nesting at Cape Rojin, New Siberia, and large numbers were found moulting in the plains of the river Bolchaia and its tributaries in the middle of the island. According to the ivory merchants, the chief nesting-place of this Goose is on the tundra near the coasts of the Arctic Ocean from the delta of the Yana River along the Rivers Syalakh and Mouksounovka, and further east towards the River Khrom, while large numbers breed on the islands in the vicinity, such as Makar and Streloniki. Not many remain during the moulting-season in the vicinity of their nesting-haunts.

Mr. Birulia was not able to give any particulars respecting the nesting-habits of this Goose from personal observation, but he ascertained from the natives in the Yansk district, and from Messrs. Koltchak and Brousneff, who found nests on the islands of the New Siberian Archipelago, that they were situated differently from those of *Branta bernicla,* as they were placed, like those of *Somateria spectabilis,* in low-lying river-valleys where there were numerous pools of stagnant water or near lakes not far distant from the coast.

Branta nigricans nests also in large numbers near the estuary of the River Balyktaklia on Kotelny Island, which is known to the ivory merchants under the name "Gull Island" and is visited by them for collecting eggs. The nests are mere hollows in the ground, well lined with down. The islands of the New Siberian Archipelago appear to be the northernmost locality where *B. nigricans* occurs in large numbers, though a few pairs may range further north. On the island of New Siberia the last was seen on the 10th/23rd August.

Anser erythropus, *Anser albifrons*, and *Anser segetum* are all three included by Mr. Birulia ; but *Anser erythropus* was only met with on the mainland, and he gives no information respecting the other two species from personal observation.

Chen hyperboreus was not seen by Mr. Birulia personally, but he was informed that it is found all over the tundra of the Yansk district from the estuaries of the Lena, on the plains of the Yana River, along the Syalakh and Mouksounovka Rivers, and even further north towards the Sviatoi

Nos. Wassili Dsergheli, who hunts for mammoth ivory every year on the islands of the New Siberian Archipelago, informed Mr. Birulia that, about thirty years previously, when on the island Kovrishka (Great Liakhovski Island) he found near the River Kamleika, a tributary of the Bloudni, a nest of *Chen hyperboreus*. He first saw the male bird, which flew away; he then met with and shot the female. The nest contained three much-incubated eggs.

Nyctea scandiaca was met with on the Taimyr and also on the New Siberian Islands.

Otocorys alpestris was only met with on Kuskin Island, where large numbers were seen.

Anthus cervinus was not uncommon on the Waigatch and on Kuskin Island, but was very rare on the Taimyr, where it was only seen on two occasions.

Saxicola œnanthe.—A young bird was seen on Kuskin Island, and one was also met with on New Siberia Island, but this species appears to be extremely rare on the New Siberian Islands.

Corvus corone is said to occur and to breed near Verhoyansk, but Mr. Birulia records this only from hearsay information.

Corvus corax was not observed by Mr. Birulia himself.

Plectrophenax nivalis.—Dr. Walter met with this bird breeding commonly on the Taimyr, and Mr. Birulia believes that it nests also on Kotelny Island.

Calcarius lapponicus was found commonly and breeds on the Taimyr, and Mr. Birulia remarks that the islands of the New Siberian Archipelago are places very suitable for the nidification of this species.

Parus ater.—On the 5th/18th September, 1900, a single bird came on board the 'Sarja,' and a second two days later. On the 8th/21st September one was seen on the cliffs of the Bay of Kolomcitseff, and three days later, when on an excursion on the shore of Voltchi Bay, Dr. Walter and Mr. Birulia each shot an example. It is interesting that this Titmouse should have been met with so far beyond the limit of the forest-region.

XXX.—*Additional Notes on the Birds of Formosa.*

By W. R. Ogilvie-Grant.

(Plates XII. & XIII.)

Since the publication in this Journal * of the paper on the birds of Formosa, I have received a small collection from the central mountains of that island formed by Dr. Arnold Moltrecht, Surgeon-in-Chief of the Emigrant Hospital, Vladivostok. During his travels in the island, which lasted for three months and a half, Dr. Moltrecht visited and made collections in the following places:—Koshun District, near South Cape (February); Rautai-San, 7000 ft., Nanto District (March); and Arizan, 7000 ft., Kagi District (April), the two last-named mountains being near Mount Morrison, in Central Formosa.

Dr. Moltrecht was fortunate enough to obtain an adult male example of the wonderful new Pheasant *Calophasis mikado*, together with a young male. An adult female was shot but not secured, being lost in the high grass. He remarks that females of this species are to be met with at a lower elevation than males, and that the adult male which he secured was killed on Arizan at an elevation of 8300 ft. This specimen was apparently sent to the St. Petersburg Museum, as only the immature male was forwarded to the British Museum.

As will be seen by the following list, Dr. Moltrecht's collection includes examples of several of the species first discovered by Mr. Walter Goodfellow on Mount Morrison in 1906. It also contains examples of a Wood-Owl, which appears to be *Syrnium nivicola* Hodgs., but is slightly smaller, and a Flycatcher, *Hemichelidon ferruginea* Hodgs.; neither of these, though found in the Himalaya and N.W. China, was hitherto known to occur in Formosa.

The former paper in 'The Ibis' is referred to throughout as "Grant & La Touche," and the numbers in front of each species are the same as those previously used. One or two recently discovered species, such as the Bullfinch (*Pyrrhula owstoni* Rothsch. & Hartert), though not included in the present collection, have been inserted in their proper places so as to complete the list.

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* "On the Birds of the Island of Formosa," by W. R. Ogilvie-Grant and J. D. D. La Touche, 'Ibis,' 1907, pp. 151–198 & 254–279.

2. Pica pica (Linn.); Grant & La Touche, p. 159.
a. ♀. Rautai-San, Nanto Dist., 18th March.

3. Urocissa cærulea Gould; Grant & La Touche, p. 159.
a, b. ♂ ♀. Rautai-San, Nanto Dist., 15th March.

5. Garrulus taivanus Gould; Grant & La Touche, p. 160.
a, b. ♂. Rautai-San, Nanto Dist., 6th and 11th March.

6. Acridotheres cristatellus (Linn.); Grant & La Touche, p. 160.
a. Rautai-San, Nanto Dist., March.

9. Chaptia brauniana Swinh.; Grant & La Touche, p. 161.
a, b. Rautai-San, Nanto Dist., 13th and 14th March.

10. Buchanga atra (Herm.); Grant & La Touche, p. 161.
a, b. ♂ et ♀ imm. Rautai-San, Nanto Dist., 11th and 18th March.

12. Oriolus ardens (Swinh.); Grant & La Touche, p. 161.
a. ♂. Rautai-San, Nanto Dist., 11th March.

20. Carpodacus incertus Grant; Grant & La Touche, p. 164.
Carpodacus vinaceus incertus Rothsch., Bull. B. O. C. xxi. p. 9 (1907) [Mt. Arizan].
a. ♂. Arizan, Kagi Dist., 12th April.

This species was described from female examples, the only male procured by Mr. Goodfellow having been an immature bird in brown plumage. Subsequently adult male specimens were obtained for Mr. Rothschild by Mr. Alan Owston's Japanese collectors, and were described in the 'Bulletin of the British Ornithologists' Club,' as quoted above.

20 *a*. PYRRHULA OWSTONI Rothsch. & Hart., Bull. B. O. C. xxi. p. 9 (1907).

This very distinct species was discovered on Mt. Arizan by Mr. Owston's Japanese collectors. Though specimens were not included in the present collection, I have mentioned it so as to complete the list of the birds of Formosa.

28. MOTACILLA LEUCOPSIS Gould; Grant & La Touche, p. 165.

a, b. ♂ ♀. Rautai-San, Nanto Dist., 18th March.

29. MOTACILLA OCULARIS Swinh.; Grant & La Touche, p. 166.

a. ♀. Rautai-San, Nanto Dist., 16th March.

32. MOTACILLA TAIVANA Swinh.; Grant & La Touche, p. 166.

a, b. ♂. Rautai-San, Nanto Dist., 16th and 18th March.

33. ANTHUS MACULATUS Hodgs.; Grant & La Touche, p. 166.

a. ♀. Rautai-San, Nanto Dist., 18th March.

36. ZOSTEROPS SIMPLEX Swinh.; Grant & La Touche, p. 167.

a. ♂. Rautai-San, Nanto Dist., 16th March.

37. SITTA SINENSIS Verr.; Grant & La Touche, p. 167.

a. ♂. Rautai-San, Nanto Dist., 10th March.

39. MACHLOLOPHUS HOLSTI Seeb.; Grant & La Touche, p. 168.

a. Arizan, Kagi Dist., April.

43. LANIUS SCHACH Linn.; Grant & La Touche, p. 170.

a. ♀. Rautai-San, Nanto Dist., 18th March.

63. TURDUS OBSCURUS Gmel.; Grant & La Touche, p. 174.

a. ♂. Arizan, Kagi Dist., 14th April.

This species was included among the birds of Formosa on the authority of Swinhoe, and an example referred to this species was procured in Northern Formosa by Mr. La Touche. I am glad to have had the opportunity of examining a Formosan specimen.

64. Turdus albiceps Swinh.; Grant & La Touche, p. 174.

a. ♂. Rautai-San, Nanto Dist., 13th March.

65. Oreocincla varia (Pall.); Grant & La Touche, p. 174.

a. ♂. Rautai-San, Nanto Dist., 10th March.

71. Ianthia johnstoniæ Grant; Grant & La Touche, p. 175, pl. iv.

a. ♂. Arizan, Kagi Dist., 11th April.

This adult male is perfectly similar to the type figured in 'The Ibis.'

72. Notodela montium Swinh.; Grant & La Touche, p. 176.

a. ♂. Rautai-San, Nanto Dist., 13th March.

b. ♂. Arizan, Kagi Dist., 4th April.

77. Trochalopterum morrisonianum Grant; Grant & La Touche, p. 178.

a. ♂. Arizan, Kagi Dist., 11th April.

78. Pomatorhinus musicus Swinh.; Grant & La Touche, p. 179.

a. ♂. Rautai-San, Nanto Dist., 14th March.

81. Dryonastes pœcilorhynchus (Gould); Grant & La Touche, p. 180.

a. ♀. Arizan, Kagi Dist., 17th April.

This specimen, like those sent by Mr. Goodfellow from Mt. Morrison, has the under tail-coverts pure white.

83. Proparus formosanus Grant; Grant & La Touche, p. 181.

a. ♂. Arizan, Kagi Dist., 12th April.

This second male example is perfectly similar to the type specimen procured by Mr. Goodfellow.

86. Myiophoneus insularis Gould; Grant & La Touche, p. 184.

a. Rautai-San, Nanto Dist.

87. Malacias auricularis (Swinh.); Grant & La Touche, p. 185.

a. ♂. Arizan, Kagi Dist., 3rd April.

88. Actinodura morrisoniana. (Plate XII. fig. 2.)

Actinodura morrisoniana Grant, Bull. B. O. C. xvi. p. 119 (1906); Grant & La Touche, p. 185.

a, *b*. ♂ ♀. Arizan, Kagi Dist., 12th April.

This remarkably distinct species, which is now figured for the first time, was discovered by Mr. Goodfellow.

89. Yuhina brunneiceps Grant; Grant & La Touche, p. 186.

a, *b*. ♂ ♀. Arizan, Kagi Dist., 6th and 13th April.

91. Liocichla steeri Swinh.; Grant & La Touche, p. 188.

a–c. ♂ ♀. Arizan, Kagi Dist., 12th and 14th April.

92. Suthora bulomachus Swinh.; Grant & La Touche, p. 188.

a. ♀. Rautai-San, Nanto Dist., 16th March.

93. Suthora morrisoniana. (Plate XII. fig. 1.)

Suthora morrisoniana Grant, Bull. B. O. C. xvi. p. 188 (1906); Grant & La Touche, p. 188.

This handsome Crow-Tit, which is now figured for the first time, is only known from a male specimen procured by Mr. Goodfellow on Mt. Morrison. It was not obtained by Dr. A. Moltrecht.

94. Pycnonotus sinensis (Gmel.); Grant & La Touche, p. 189.

a, *b*. ♂ ♀. Rautai-San, Nanto Dist., 14th and 16th March.

96. Hypsipetes nigerrimus Gould; Grant & La Touche, p. 189.

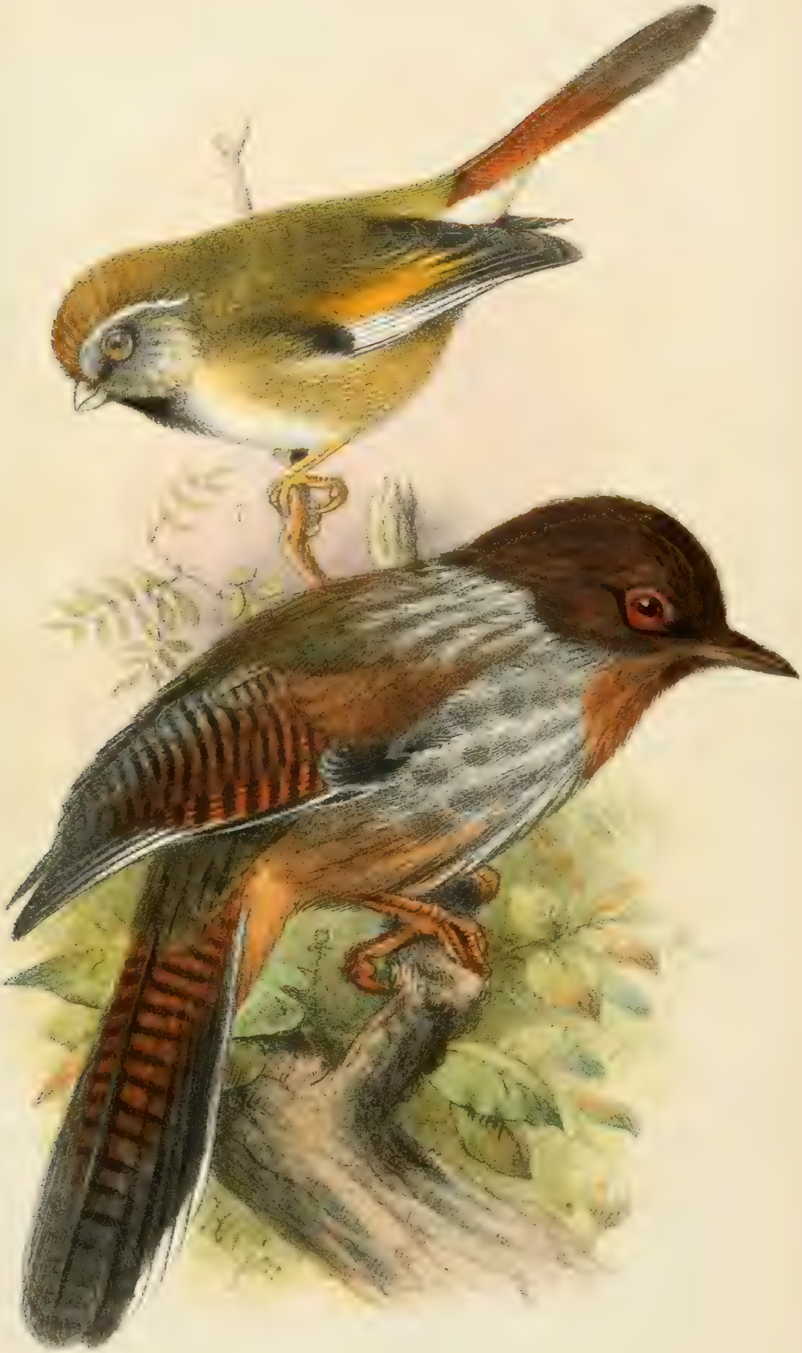
a. ♀. Rautai-San, Nanto Dist., 14th March.

99. Pericrocotus griseigularis Gould; Grant & La Touche, p. 190.

a, *b*. ♂ ♀. Rautai-San, Nanto Dist., 11th and 12th March.

101 *a*. Hemichelidon ferruginea Hodgs.; Oates, Faun. Brit. Ind., Birds, ii. p. 6 (1890).

a. ♂. Arizan, Kagi Dist., 7th April.



H Grönvold del. [illegible]

1. SUTHORA MORRISONIANA, ♂.
2. ACTINODURA MORRISONIANA, ♂.

This species is new to the avifauna of Formosa. It inhabits the eastern Himalaya and ranges thence eastwards across China to Sumatra, Borneo, and Palawan.

104. CYORNIS VIVIDA Swinh.; Grant & La Touche, p. 191.

a, b. ♂ ♀. Arizan, Kagi Dist., 7th and 14th April.

The sex of specimen *b*, which is marked "♀," is probably incorrect. The specimen has the greater part of the crown dark ultramarine-blue, and many feathers of the lower back and rump tipped with the same colour.

107. XANTHOPYGIA AFFINIS Grant; Grant & La Touche, p. 192.

a. ♂. Rautai-San, Nanto Dist., 13th March.

111. CRYPTOLOPHA FULVIFACIES (Swinh.); Grant & La Touche, p. 193.

a. ♂. Arizan, Kagi Dist., 17th April.

116. DENDROCOPUS INSULARIS (Gould); Grant & La Touche, p. 194.

a. ♂. Arizan, Kagi Dist., 10th April.

120. CYANOPS NUCHALIS (Gould); Grant & La Touche, p. 195.

a. ♂. Rautai-San, Nanto Dist.

b. ♀. Arizan, Kagi Dist., 4th April.

123. CENTROPUS JAVANICUS Dumont; Grant & La Touche, p. 196.

a. Ad. Rautai-San, Nanto Dist., March.

127. ALCEDO ISPIDA Linn.; Grant & La Touche, p. 197.

a, b. ♂. Rautai-San, Nanto Dist., 19th March.

131. SCOPS GLABRIPES Swinh.; Grant & La Touche, p. 255.

a. Ad. Arizan, Kagi Dist., April.

134 *a.* SYRNIUM NIVICOLA Hodgs.

a. ♂. Rautai-San, Nanto Dist., 9th March.

It is the first time this Wood-Owl has been recorded from Formosa. I have compared the specimen, which is an example in the rufous phase of plumage, with Himalayan birds. From these it differs only in being very slightly smaller (wing 10·5 inches), and in having fewer (only two or three) whitish-buff spots on the shorter outer scapulars, while the pale markings on the inner webs of the outer primary-quills are indistinct or absent. The differences are, however, very slight and possibly merely individual. *S. nivicola* is known to range from the Himalaya to North-western China.

179. NYCTICORAX NYCTICORAX (Linn.); Grant & La Touche, p. 263.

a. ♂. Rautai-San, Nanto Dist., 27th March.

180. BUTORIDES JAVANICA (Horsf.); Grant & La Touche, p. 263.

a. Rautai-San, Nanto Dist., March.

237. PODICIPES PHILIPPENSIS Bonn.; Grant & La Touche, p. 272.

a. ♀. Rautai-San, Nanto Dist., 19th March.

245. SPHENOCERCUS SORORIUS Swinh.; Grant & La Touche, p. 273.

a. ♂. Rautai-San, Nanto Dist., 14th March.

248. TURTUR CHINENSIS (Scop.); Grant & La Touche, p. 274.

a. ♂. Rautai-San, Nanto Dist., 14th March.

259. PHASIANUS FORMOSANUS Elliot; Grant & La Touche, p. 277.

a. ♂ imm. 13th Feb.

Dr. Moltrecht has forwarded an adult male of this species which is exactly similar to the type-specimen procured by Swinhoe. So far as I am aware, the female has never been sent to England, and the male is apparently difficult to procure.

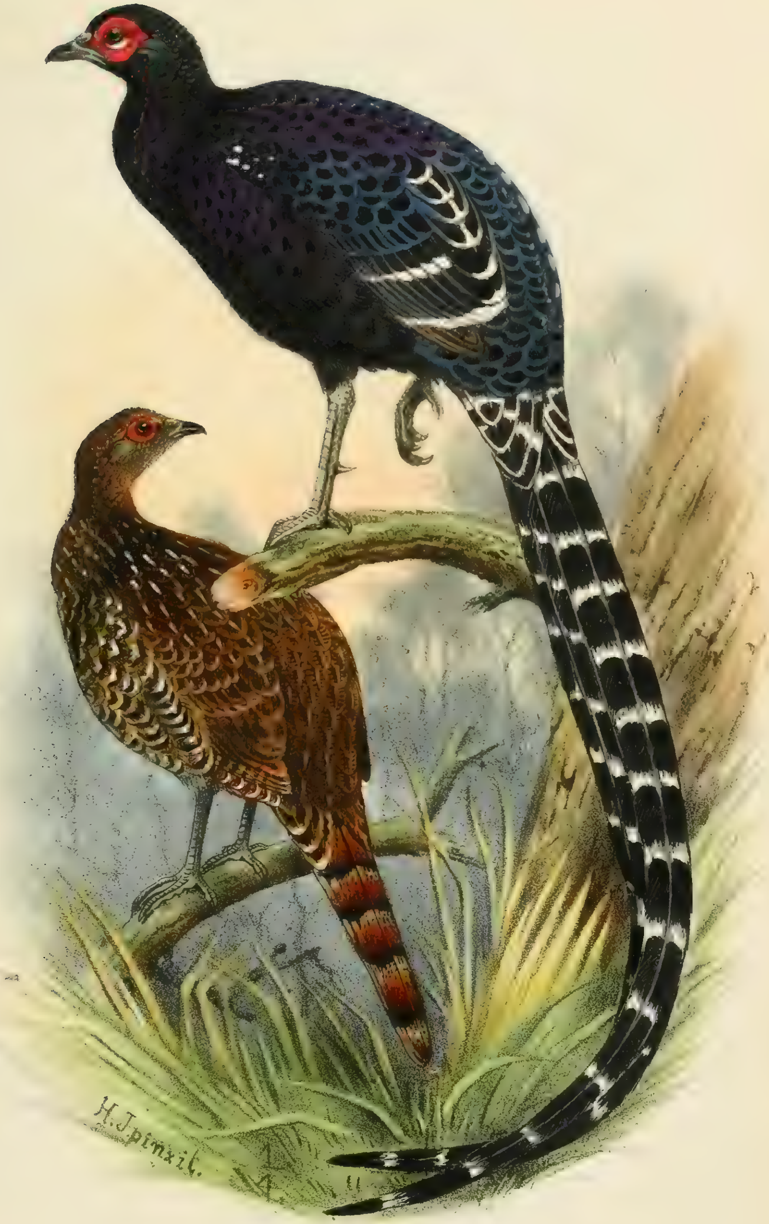
260. CALOPHASIS MIKADO. (Plate XIII.)

Calophasis mikado Grant, Bull. B. O. C. xvi. p. 277 (1906); Grant & La Touche, p. 277.

Phasianus mikado Rothsch., Bull. B. O. C. xxi. p. 22 (1907).

a. ♂ imm. Arizan, 8300 ft., Kagi Dist., April.

In addition to the immature bird mentioned above,



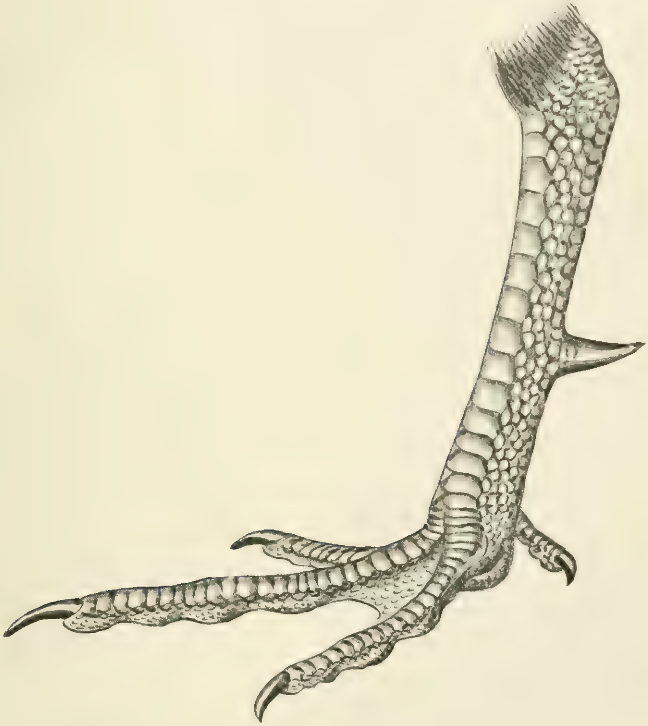
H. Grönvold lith.

West, Newman imp.

CALOPHASIS MIKADO. ♂, ♀.

Dr. Moltrecht procured an adult male, which has, I believe, been sent to the St. Petersburg Museum. He states in his letter that he also shot an adult female which accompanied the younger male, but, being only winged, was lost in the long impenetrable grass.

Text-fig. 7.



Foot of *Calophasis mikado.*

I take this opportunity of pointing out that in this species the scaling of the tarsus is unlike that of any known Pheasant; for instead of the hinder aspect being covered with scales, as is the case in *Phasianus* and other species of *Calophasis,* it is reticulate, and each of the rather small octagonal scales is elevated, forming a roughened surface (see text-fig. 7). This peculiarity was first observed by

Major H. Jones, to whom the members of the 'Ibis' are indebted for the beautifully executed water-colour drawing of this species (Pl. XIII.), which has been carefully copied by Mr. Grönvold. We have also to thank Major Jones for a drawing of the foot, which is here reproduced (text-fig. 6).

DESCRIPTION OF THE PLATES.

Plate XII.

Fig. 1. *Suthora morrisoniana*, p. 604. From the typical specimen procured by Mr. Goodfellow.

2. *Actinodura morrisoniana*, p. 604. From Dr. Moltrecht's male specimen.

Plate XIII.

Calophasis mikado, ♂ et ♀.

Drawn by Major Jones and put on stone by Mr. Grönvold from specimens in Mr. Rothschild's collection.

XXXI.—*The Report on the British Museum for* 1907.

The Annual Report to Parliament on the British Museum, which has been lately issued, contains a statement of the progress made in the year 1907 in the arrangement and description of the collections and an account of the objects added to them, from which we extract the following particulars, referring to the National Collection of Birds.

Progress has been made with the work in the Gallery; the British Birds in the Pavilion have now been mostly remounted or renewed, and will shortly be completely arranged.

Cases containing the bower of the Gardener Bower-Bird (*Amblyornis subalaris*) and a nesting-group of Buffon's Skua (*Stercorarius parasiticus*) have been added.

The Catalogue of the Eggs, vol. v., has been continued to the end of the *Fringillidæ*, and vol. v. of the 'Hand-list of Birds' is approaching completion.

A considerable number of skeletons has been added to the Avian Osteological series—partly by the incorporation of the Robert Collection, and partly by preparations made from specimens in the spirit collection, preserved for that purpose. In addition much curatorial work has been necessary to keep the collection in order. The arrangement of the Passerine skeletons is approaching completion.

"The accessions to Class 'Aves' in 1907 number thirteen thousand nine hundred and one. Of these the most noteworthy are:—

"Ten thousand specimens from China, collected and presented by Mr. F. W. Styan; thirty-four eggs from South Africa, presented by Mr. J. A. Bucknill; forty-one birds from Angoni-land, presented by Mr. C. B. Storey; four birds from Uganda (types of newly described species), presented by Mr. F. J. Jackson, C.B., C.M.G.; two eggs of a Wood-Hoopoe from Natal, presented by Dr. P. L. Sclater, F.R.S.; sixty birds, nests and eggs, collected in New Guinea, presented by Capt. F. R. Barton, C.M.G.; nineteen birds from Setubal, Portugal, presented by Don Luiz Gonzaga do Nascimento; fifty birds and eggs from the Kurrum Valley, presented by Mr. C. H. T. Whitehead; seven skeletons of *Colius striatus* from Gazaland, presented by Mr. C. F. M. Swynnerton; twenty-seven mounted birds, chiefly British, for the Exhibition Gallery, presented by Mr. Rowland Ward; twelve birds from Aldabra Island, including one of a species new to the collection, presented by Mr. R. Dupont; one hundred and fourteen birds collected in Mashonaland, presented by Mr. Guy A. K. Marshall; seventy-seven birds from the Gazelle River district, collected and presented by Mr. G. Blain; seventy-six birds from Northern Rhodesia, collected and presented by Dr. F. O. Stoehr; sixty-six birds from the Gambia, collected and presented by Dr. E. Hopkinson; one hundred and six birds from Japan, presented by Mr. R. Gordon Smith; twenty-five birds collected in Northern Rhodesia (including the types of two species new to science), collected by Mr. Sheffield A. Neave, presented by the Manchester Museum; two hundred and eighty birds from Persia, collected by Mr. R. B. Woosnam, presented by Col. A. Bailward; thirty-four birds from Western Australia, collected by Mr. G. C. Shortridge, presented by Mr. W. E. Balston; three hundred and eighty-four birds from Japan, Saghalien, and China, presented by the Duke of Bedford, K.G.; forty-three birds from the Malay Peninsula, presented by the Selangor State Museum; eight hundred and thirty-five birds from Spain, bequeathed by the late Mr. Howard Saunders; forty-one birds from Southern Rhodesia, collected by Mr. A. L. Sclater, purchased; three hundred and five eggs from China, collected by Mr. J. D. La Touche, purchased; two hundred and sixty-seven birds from New Guinea and the Aru Islands, collected by Mr. W. Goodfellow, purchased; two hundred and forty-eight birds from Mfumbiro, Tanganyika, and the Upper Congo, collected by Mr. D. Carruthers, purchased; one hundred and sixty-one birds from Mt. Morrison, Formosa (including types of ten new species), purchased; twenty-seven birds from Annam (including types of three new species and examples of *Rheinhardtius ocellatus*), collected by Dr. Vassal, purchased; one hundred and thirty-one birds from the Goolis Mts., Somaliland, purchased; thirty eggs from Tasmania, received in exchange; one hundred and sixty-six birds and five eggs from Northern Rhodesia, collected by Mr. Sheffield A. Neave, presented by the British South African Company; nineteen specimens of species new to the collection, received in exchange from the Hon. Walter Rothschild, M.P.; and forty birds from the Kain district of Khorasan and Tirhut, presented by Mr. J. W. Watson."

We are sure that we are expressing the wishes of all ornithologists when we state our hope that the fifth (and last) volume of the 'Hand-list of the Genera and Species of Birds' may soon be issued. Five years have elapsed since the fourth volume of this important work was published, and the delay in completing it is a constant source of trouble to working ornithologists.

Although it is not mentioned in this Report, we may venture to express our satisfaction that Mr. William Plane Pycraft, M.B.O.U., who has contributed so many excellent anatomical and osteological papers to this Journal, has been appointed, permanently, Assistant in the Zoological Department of the British Museum, and has been placed in charge of the Osteological Collections.

XXXII.—*Obituary.*

Professor Barboza du Bocage.

With much regret we announce the death, at Lisbon, in July last, of the senior Foreign Member of the British Ornithologists' Union, José Vicente Barboza du Bocage, at the advanced age of 84.

Prof. Bocage's name is well known to all students of the ornithology of Western Africa as one of our principal authorities on that subject. His best-known work is upon the birds of Angola ('Ornithologie d'Angola'), published at Lisbon, 1877–81. But, besides this, he wrote a large number of memoirs and papers in various journals relating to the birds of the Portuguese Colonies in Africa. On turning to the General Subject-Index of 'The Ibis' (1859–1894, p. 10), the enquirer will find a long list of papers and notices under Prof. Bocage's name, extending from 1863 to 1894. In 1898 he published a paper on the birds of the Cape Verde Islands (see 'Ibis,' 1898, p. 614). He was for many years Director of the National Museum at Lisbon, the Zoological Section of which was lately renamed the "Museu Bocage," in honour of the learned Professor, who had done so much for its augmentation and development. Several African birds have been called after him*, and in 1894 Capt. Shelley instituted a new genus of Bush-Shrikes (*Bocagia*) in his honour.

Prof. Bocage was elected a Foreign Member of the British Ornithogists' Union in 1872, and was also a Member of many other scientific societies in England and on the Continent. He was a Councillor of State and Peer of Portugal, and Professor of Zoology at the Polytechnic School of Lisbon.

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* See *Turdus bocagii, Neisna bocagii,* and other species mentioned in Reichenow's 'Vögel Afrikas.'

XXXIII.—*Notices of recent Ornithological Publications.*

[Continued from p. 541.]

79. *Amundsen's North-West Passage.*

[The North-West Passage, being the Record of a Voyage of Exploration of the Ship 'Gjöa,' 1903-1907. By Roald Amundsen. Two vols. London: Constable & Co., 1908.]

The narrative of Capt. Amundsen's successful accomplishment of the North-West Passage, and of his long sojourn at the North Magnetic Pole will be read with great pleasure by all interested in Arctic Exploration. Although there is no chapter in it specially treating of the avifauna, there are frequent references to birds in its pages, and we observe that "Swan Lake" and "Snow-Sparrow Hill" are among the names given to new places in King-William Land. The first messenger of spring in this high northern spot was a Raven, which arrived on April 4th. Ptarmigan seem to have been plentiful in summer in many places, and to have been much used for food, but the main supply of fresh meat was furnished by Reindeer and Hares.

We have applied to Prof. Collett for information concerning the birds collected during this expedition. He kindly tells us that the skins have reached Christiania in rather a bad state, but have been placed in the hands of a taxidermist to be cleaned and put into order. He will no doubt give us a good account of them later. They were all collected by the steward Lindstróm, to whom the investigations in Natural History were assigned.

We may add that a good general account of Capt. Amundsen's adventurous expedition will be found in an article by Mr. Alfred Smythe, F.R.G.S., published in the 'Nineteenth Century' for February 1908, and entitled "The Real Hero of the North-West Passage."

80. '*Annals of Scottish Natural History.*'

[The Annals of Scottish Natural History. A Quarterly Magazine with which is incorporated 'The Scottish Naturalist.' April and July 1908.]

We usually expect to find some very important articles in the Scottish 'Annals,' and are not disappointed in these numbers, for Mr. Eagle Clarke writes his third report on the birds of Fair Isle (which includes the observations made in 1907), and Mr. Paterson follows with his "Report on Scottish Ornithology for 1907." In the latter the most striking facts are naturally those furnished by Mr. Clarke, and these may be summarized as follows:—117 species in all were noticed in Fair Isle, 77 in spring and 111 in autumn, the latter including 71 also observed in spring. 17 species were new to the fauna of the island, the rarest being the Siberian Chiffchaff (several examples), the Black-headed Bunting (1), the Black-throated Wheatear (1), and the Short-toed Lark (1). Next in importance were the Grasshopper-Warbler, the Grey-headed Wagtail, the Wood-Warbler, and the Black Redstart. But, though many rare birds visited the island, many (such as the Goldcrest) that were common in other years failed to appear. It is not, however, only for records of rare species that Mr. Clarke's work is so valuable, especially as these may be chance visitors; the importance of his constant visits to this isolated spot and the subsequent reports on the rich harvest secured during migration lies in the fact that we can thereby judge more fairly of the status of our occasional visitors, and determine with more confidence how far their visits are regular, how far fortuitous. The present report is especially helpful to this end, and Fair Isle has proved a particularly fortunate choice of station and a favoured resting-place of migrants.

Turning to Scotland in general, Mr. Harvie-Brown furnishes us with another of his admirable sketches of distribution, the subject on this occasion being the Woodcock, and the area Central "Forth"; Mr. Service writes of the Bar-tailed Godwit in Solway (where a flock of 200 individuals remained during the whole summer), and Mr. Laidlaw on the food of the Black-headed Gull.

An appeal is printed, from the Royal Society for the Protection of Birds, with regard to the preservation of rare species; and in the general notes we observe that the Siberian Chiffchaff and the Wood-Warbler have occurred in

Orkney as well as Shetland, and that a Black Tern was seen on May 30th at Peebles, besides other interesting matter.

81. *Arrigoni degli Oddi on the Birds in the Collection of the Marchesa M. Paulucci.*

[Note ornitologiche sulla collezione del Monte appartenente alla Signora Marchesa M. Paulucci. Att. Ist. Veneto di Scienz. lxvi. parte seconda.]

Count Arrigoni gives a description of the rich collection of beautifully mounted Italian birds in the Villa del Monte, near Certhaldo in Tuscany, belonging to the Marchesa M. Paulucci. It contains 1140 examples of 336 species, concerning which many interesting notes are given. Among the rarities are *Falco barbarus* (from Sardinia), *Coccystes glandarius* (from Tuscany), *Lusciniola melanopogon* (from Padua), a hybrid between *Fringilla cœlebs* and *F. montifringilla*, *Fratercula arctica*, and many others.

82. *'Avicultural Magazine.'*

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. vi. Nos. 6–10 (April–August 1908).]

This magazine once more furnishes us with a goodly number of interesting articles. Capt. Flower sends from the Zoological Gardens of Giza a paper on *Balæniceps rex*, in which he discusses the history and affinities, appearance and habits of that remarkable bird. There are three specimens of it at Giza, and though they have not yet bred in captivity there, Capt. Flower is able to give us much valuable information from his own personal observations.

The coloured plates are of *Phonipara lepida*, *Rallus abbotti*, and *Pholidauges leucogaster*, which are accompanied by accounts of the birds and their allies by Mr. Phillipps, Mr. Meade-Waldo, and Dr. Hopkinson respectively, while Dr. Butler has also a few words to say on the last-named species. Mr. Meade-Waldo and Dr. Hopkinson have had the unusual advantage of studying the birds in their native haunts. Uncoloured plates are, moreover, provided of

Rollulus roulroul and *Grus antigone,* with letterpress by Mr. Astley and Mr. Smith.

Mr. Gordon Dalgleish describes the methods by which birds utilized for purposes of fashion are captured in India, Dr. Butler writes of " the mind of a bird," Mr. Stead of the trapping of the Kea (*Nestor notabilis*) and the discovery of the nest, and Mr. Seth-Smith of his visit to Australia on behalf of the Zoological Society of London, while Miss Alderson gives further notes on the denizens of her aviaries in general. Minor articles by different authors are also to be found.

83. *Balducci on the Sterna of Italian Birds.*

[Morfologia dello Sterno degli Uccelli con ricerche originali. Dr. Enrico Balducci. Prato, 1908.]

The sternum is certainly one of the most characteristic and easily studied parts of the bird's osseous structure, although it should not be taken alone, and a good monograph on the sternum of birds would be a valuable aid to their classification. But our author confines himself, unfortunately, to Italian birds and his conclusions are therefore of little use to the systematist. After 32 pages of text we find some 50 pages of exact measurements of a large number of sterna which have been examined. This is followed by 28 plates, which contain 248 outline figures, front and side views, of the sterna of birds. These figures would have been much more useful if names as well as numbers had been attached to them. The author follows the arrangement and numbering of Giglioli's ' Avifauna Italica.'

84. *Bangs and Peck on Birds from British Honduras.*

[On some rare and new Birds from British Honduras. By Outram Bangs and Morton E. Peck. Proc. Biol. Soc. Washington, vol. xxi. p. 43 (1908).]

Four birds are described as new in this paper—*Limnopardalus maculatus insolitus, Antrostomus badius, Troglodytes irrequies,* and *Coturniculus savannarum cracens.* Notes are given upon others as "rare or worthy of special notice."

Mr. Peck will shortly publish a complete list of the birds of British Honduras.

85. *Beebe on the Seasonal Changes of Colour in Birds.*

[Preliminary Report on an Investigation of the Seasonal Changes of Colour in Birds. By C. W. Beebe. Amer. Nat. xlii. p. 34 (1908).]

Mr. Beebe at the Zoological Park, New York, is making a series of experiments on the cause of certain birds assuming a special plumage during the breeding-season and then moulting into a winter dress. He finds that by confining such birds in small cages, while gradually cutting off the supply of light and increasing the amount of food, he is able to make them "skip" the winter plumage altogether, and, when they moult, to pass from one nuptial plumage to another nuptial plumage without ever putting on the dull dress of the winter season. He thinks that it is thus proven that "the sequence of plumage in these birds is not in any way predestined through inheritance bringing about an unchangeable succession," but that it may be "interrupted by certain external factors." Mr. Beebe has discovered an interesting fact, but we are not sure that the conclusion drawn from it is correct.

86. *Berlepsch on the Birds of Cayenne.*

[On the Birds of Cayenne. By Hans, Graf v. Berlepsch. Nov. Zool. xv. p. 103 (1908).]

No one in these days understands South-American birds better than Graf v. Berlepsch, and Dr. Hartert has done well to place the series of skins gathered together by the experienced American collector, Mr. George K. Cherrie, during a four-months' visit to Cayenne, in the Count's hands. The thirteen hundred well-prepared specimens obtained on this occasion have been carefully studied, while those recorded by former authorities have been added to the List. The result is a nearly complete account of this attractive Avifauna, which Mr. Cherrie pronounces to be "very rich both in species and individuals." The first portion of the article which is now before us enumerates 280 species, and gives the necessary particulars about each of them. The following new subspecies are characterized:—*Oryzoborus angolensis brevirostris, Empidochanes fuscatus fumosus,* and *Formicivora consobrina microsticta.* The Formicariidæ of Cayenne are very numerous. No less than 55 species are catalogued, and 6 others are stated as being "likely to occur there."

87. *The Budgett Memorial Volume.*

[The Work of John Samuel Budgett, Balfour Student of the University of Cambridge, being a Collection of his Zoological Papers together with a Biographical Sketch by A. E. Shipley, F.R.S., and Contributions by Richard Assheton, Edward J. Bles, Edward T. Browne, J. Herbert Budgett, and J. Graham Kerr. Edited by J. Graham Kerr. Cambridge. 1 vol., 4to. 1907.]

No better memorial could have been devised of our much-lamented friend, the late John Samuel Budgett, and the excellent work that he did in his short lifetime, than the collection of zoological papers contained in the handsome volume now before us. It has been carefully edited by Prof. Graham Kerr, with additions furnished by him and other friends from the materials left unfinished at Budgett's death. Although Budgett did not profess to be an ornithologist, he was a careful observer of bird-life, as will be seen from some passages in Mr. Shipley's biographical sketch which heads the volume. His studies were mainly devoted to other Classes of Vertebrates, but he wrote a careful and instructive paper on the "Birds of the Gambia River," which was published in this Journal in 1901 (pp. 481–497), and is reprinted in the Memorial Volume.

88. *Carriker on Birds from Costa Rica.*

[Brief Descriptions of some new Species of Birds from Costa Rica, and a Record of some Species not hitherto recorded from that Country. By M. A. Carriker, Jr. Ann. Carn. Mus. iv. Nos. 3 & 4 (1906).]

Mr. Carriker describes *Formicarius castaneiceps* and *Sporophila crissalis* as new species based on specimens collected by himself in Costa Rica and now in the Carnegie Museum. Seven species are, moreover, recorded as additions to the Costa-Rican Avifauna.

89. '*The Emu.*'

[The Emu. A Quaterly Magazine to popularize the Study and Protection of Native Birds. Vol. vii. pt. 4, and vol. viii. pt. 1 (April, July, 1908).]

The most important paper in these two parts seems to be that by Mr. H. C. Oberholser entitled "A Synopsis of the Genera and Species of Cygninæ," in which the forms are discussed, and their "type localities," characteristics, and geographical distribution are given, with a key to the genera and species. These genera, according to the writer, are *Palæocycnus*, with one species, *P. falconeri* (extinct); *Olor*, with species or subspecies *O. buccinator*, *O. columbianus*, *O. bewicki bewicki*, *O. bewicki minor*, and *O. cygnus* (*Clangocycnus* is used as a new subgenus for *O. buccinator*, the remaining species being included in a subgenus *Olor*); *Cygnus*, with species *C. olor* and *C. melanocoryphus*; *Chenopis*, with species *Chenopis atrata*, *C. sumnerensis* (extinct), and *C. nanus* (extinct); *Archæocycnus*, with one species *A. lacustris* (extinct).

Mr. E. M. Cornwall gives an account of the birds found breeding near Mackay, N. Queensland, in 1907 and 1908, which includes important notes on the nests and eggs; Mr. T. P. Austin follows with the details of his voyage from Pioneer River to various islands and the Great Barrier Reef; and to the southward Mr. S. W. Jackson writes of a trip to the upper Hunter River district of New South Wales, where Gould collected in 1839–1840, while Mr. W. T. Armstrong describes his visit to the Furneaux Group of islands in Bass Strait. The latter's report on the decrease of *Cereopsis novæ-hollandiæ* is impugned subsequently by Messrs. Smith and Maclaine (see vol. viii. p. 48).

Besides these, there are papers by Mr. E. J. Banfield on *Chibia bracteata*, Mr. C. F. Cole on Finches as foster-parents to Cuckoos, Mr. H. W. Ford on Birds from Mareng in the Bendigo district, and Miss J. A. Fletcher on those of the Wilmot district in Tasmania. Minor articles and the usual supplements help to make up the whole, but we must not omit to mention among the uncoloured plates one of the first nest of *Ptilorhis paradisea* found with a full clutch of two eggs, and another of the nest and a single egg of *Paradisea raggiana,* as well as a coloured plate of *Oreoscoptes gutturalis.* Lastly, we must notice Mr. A. H. Mattingley's defence of Cormorants accused of causing a decrease in the supply of fish, and Mr. A. J. Campbell's description of a new Emu-Wren (*Stipiturus mallee*).

In 'Stray Feathers' *Ninox connivens* is stated to be partly diurnal and to take its prey by day. In the section "From Magazines," attention is drawn to a new form of *Chalcophaps* (*C. occidentalis*) recorded in the 'Victorian Naturalist,' xxiv. p. 135.

90. *Flower on Zoological Gardens.*

[Notes on Zoological Gardens visited in Europe, 1897. By Stanley S. Flower. Cairo, 1908. 8vo. 72 pp.]

Capt. Stanley S. Flower, as on a former occasion, devoted his summer in Europe in 1907 to visiting the Zoological Gardens and Museums of England and the Continent. The information thus acquired, and contained in the present Report, relates mostly to Mammals. But Birds, although perhaps not so prominent in some Gardens and less attractive to the multitude, also occupied his attention, and there is much to be learnt from his observations on this class of animals.

"Harz-Canaries" are well known, but the extent of the trade in these favourite songsters can hardly be believed. A single dealer at Alfeld on the Leine claims that 100,000 cock Canaries have passed through his hands in one year.

Among the many rare birds in the Amsterdam Gardens were seen examples of the Gold-crested Mynah (*Ampeliceps coronata*), the Surinam Ani (*Crotophaga ani*), and the Harpy Eagle (*Thrasaëtus harpyia*). The Stork-paddocks are always well tenanted at Amsterdam, and comprise at present two specimens of the rare *Ciconia boyciana*, and a veteran Adjutant which has been over thirty years in the Gardens. At Antwerp, in the Gardens of the Société Royale de Zoologie, the new large "Flying Aviary" attracted Capt. Flower's special attention, and the series of birds is "one of the largest in the world." But Capt. Flower lavishes still greater praise on the energetic Director of the Zoological Garden at Berlin, where the series of birds is "magnificent," especially of Passerines, Picarians, and Parrots. Such rarities as *Rhodonessa caryophyllacea* and *Didunculus strigirostris* shew that other groups are not neglected. Besides many other public gardens, Capt. Flower also visited the "beautiful country-seat" of Heer F. E. Blaauw at Gooilust in Holland, celebrated for its series of Water-fowl, and the park at Woburn, where the President of the Zoological Society of London keeps his unrivalled private Menagerie. Nor did he neglect Aquariums and Museums, about which much information may be obtained from this instructive report, which does credit alike to the author's industry and to his unfailing powers of observation.

91. *Gadow and Gardiner on Birds from the Coral-Islands of the Indian Ocean.*

[The Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the leadership of Mr. J. Stanley Gardiner.—No. VIII. Aves, with some Notes on the Distribution of the Land-birds of the Seychelles. By H. Gadow, M.A., Ph.D., F.R.S., and J. Stanley Gardiner, M.A., F.L.S. Trans. Linn. Soc., 2nd ser. Zool. vol. xii. pt. 1.]

The series of reports on the rich collections made by the Percy Sladen Trust Expedition in the Indian Ocean and on its islands, now being published by the Linnean Society, comprises a memoir on the birds collected and observed, which was read at the meeting of the Linnean Society on February 21st, 1907. The list is rather disappointing, as we look for new discoveries on some of the little-known islands in the Indian Ocean visited by the expedition, but find none! The "systematic list" contains the names of 37 species, but "none of them are peculiar to the islands." Most of them are marine birds, stray waders, or species introduced by mankind, such as *Foudia madagascariensis, Gracula religiosa*, and *Francolinus pondicerianus*.

No attempt was made to collect birds in Mauritius or the Seychelles. This was perhaps quite as well, as we learn that of the indigenous forms found there more than half are now extinct "owing to the exertions of paid collectors"!

A useful list, originally prepared by Dr. Gadow for the International Congress of Ornithologists at Cambridge in 1905, illustrates the features of the avifauna of the Seychelles and the Mascarene Islands, and shews the representative species of land-birds in each island. The most noteworthy genera are *Zosterops, Hypsipetes, Coracopsis, Erythrœnas,* and *Turtur.* All of these are well represented by different species in the Mascarene Ornis, in which African and Indian influences seem to be nearly balanced.

A large Pelican (*Pelecanus crispus*) is said to have been found breeding in the "cocoanut and other large trees" of the eastern island of the St. Joseph Atoll in the Amirante group. This is a curious observation, but we would ask whether specimens were obtained and whether it is certain that they are *Pelecanus crispus*?

92. *Goeldi on the Names of two South-American Birds.*

[*Galbalcyrhynchus purusianus* e *Pipra cœlesti-pileata,* una questão de prioridade pouco a meu gosto. Pelo Prof. Dr. Emilio A. Goeldi, Director do Museu do Pará. Bol. Mus. Goeldi (Museu Paraense), vol. v. p. 77.]

This is Dr. Goeldi's view in a question of priority as regards the proper names of two South-American birds, given as above written by Dr. Goeldi, but called in the one case *Galbalcyrhynchus leucotis innotatus* by Dr. v. Ihering and in the other *Pipra exquisita* by Hellmayr *. Who shall decide when Doctors disagree"?

93. *Goeldi on a new Genus of Trogons.*

[*Microtrogon,* novo nome generico proposto para *Trogon ramonianus* Des Murs. Pelo Prof. Dr. Emilio A. Goeldi. Bol. Mus. Goeldi (Museu Paraense), vol. v. p. 92.]

The new generic name *Microtrogon* is proposed for *Trogon ramonianus* (see Grant, Cat. B. xvii. p. 464) on account of its small size and the shape of the bill viewed in a transverse section, of which an illustration is given.

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* See 'Ibis,' 1906, p. 35, pl. i.

94. *Hellmayr on Ornithology in* 1904.

[Archiv für Naturgeschichte. Siebzigster Jahr. ii. Band, i. Heft. Aves für 1904. Von C. E. Hellmayr. Berlin, 1908.]

The Reports on the progress of the various branches of Zoology which form the second volume of each year's issue of the well-known 'Archiv für Naturgeschichte,' founded by Wiegmann some seventy years ago, have fallen much into arrear of late years, but the present Editor, Dr. Weltner, seems to be determined to bring them up to date. As regards the "Aves," with which section we are specially concerned, he could hardly have made a better selection than Herr Hellmayr, who is the author of the Report for 1904, as he was of that for 1903. At the same time we must call attention to the fact that the German Zoological Record is still several years behind the British Record, of which we noticed the issue for 1906 in our last number *.

Mr. Hellmayr's report for 1904 seems to be exhaustive and accurate. It has called our attention to several papers which we had overlooked. His short abstracts are very useful. But we wish that he had commenced with a *complete* list of titles, as is done in our Record. We hope soon to receive similar records for 1905 and 1906.

95. *Hellmayr on the Birds of Goyaz, Brazil.*

[An Account of the Birds collected by Mons. G. A. Baer in the State of Goyaz, Brazil. By C. E. Hellmayr. Nov. Zool. xv. p. 13 (1908).]

The remote Brazilian State of Goyaz, which lies between Minas and Matto Grosso, has not been often visited by the zoologist. It was first explored by Geoffroy St.-Hilaire, and was afterwards traversed by the famous collector Natterer, on his way to Matto Grosso. Castelnau and Deville and Professor Behn made collections in Goyaz, but in neither case were they properly worked out. Monsieur Baer, who has given an account of his journey in the 'Bulletin du Musée d'Histoire Naturelle' (xiii. p. 28, 1907), collected during his sojourn in Goyaz upwards of 800 bird-skins, which Mr. Rothschild judiciously placed in Mr. Hellmayr's hands. These specimens are now referred to 280 species and subspecies, and are described in the present memoir by Mr. Hellmayr in his usual exact and careful manner.

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* See "Sharpe on the Ornithological Literature of 1906", above p. 539.

The most important result is the discovery of an Amazonian element in the avifauna of the Rio Araguaya, which flows into the Trocantins. On the other hand, the Fauna of Southern Goyaz closely resembles that of South-eastern Brazil.

Mr. Hellmayr enumerates every specimen in the collection and gives the precise date and locality, together with many excellent notes. The following subspecies are described as new to science:—*Thryothorus genibarbis intercedens*, *Myrmelastes luctuosus araguayæ*, *Nannochordeiles pusillus septentrionalis*, *Celeus flavescens intercedens*, *Bucco maculatus parvirostris*, and *Columba plumbea baeri*.

It is sad that such an excellent author as Mr. Hellmayr should disfigure his good work by following the practices of of the "new school" and disregarding the rules of grammar and common-sense.

96. '*Irish Naturalist.*'

[The Irish Naturalist. A Monthly Journal of General Irish Natural History. Vol. xvi. (January to December 1907). Eason & Sons, Dublin.]

The most notable incident recorded during the year 1907 by our contemporary is the occurrence at Galley Head, Co. Cork, of an example of the Canadian Crane (*Grus canadensis*). It was shot on September 14th, 1905, and was in poor condition, but shewed no signs of having been in captivity. How far these American species are to be admitted to the British List is always a doubtful question, especially in the case of such as are kept in aviaries, but we hope that we shall hear more of this example from the other side of the Irish Channel, and whether any bird-lovers in the vicinity happen to have kept, or rather to have lost, an individual in 1905.

County records are always of interest, and we now have those of the Crossbill breeding in Co. Wicklow and the Tree-Sparrow in Co. Donegal, besides further notes on the Red-throated Diver in the north of Ireland.

Mr. N. H. Foster continues his observations on the weight of birds' eggs (*cf.* vol. xi. p. 237, vol. xii. p. 295), and both the January and February numbers are entirely devoted to a survey of the Natural History of Lambay Island, Co. Dublin, wherein Mr. R. Patterson gives an account of the birds (pp. 23–31). The rarest species now breeding there are the Manx Shearwater and the Black Guillemot, but the Raven, Chough, and Sea-Eagle are reported to have nested there in former days.

97. *Martorelli on* Lanius homeyeri *in Italy.*

[Il *Lanius homeyeri*, Cabanis, in Italia, nota ornitologica del socio Prof. Giacinto Martorelli. Atti Soc. Ital. Sc. Nat. xlvi. (1908).]

Although several of our leading systematists have lately dealt with *Lanius excubitor* and its nearly allied forms, they have been by no means unanimous in the conclusions arrived at on this difficult subject. Prof. Martorelli, having paid great attention to the question for some years, has come to the conclusion that besides the typical *Lanius excubitor* and *L. borealis* a third closely related form also occurs in Italy not unfrequently, and that this form is the *L. homeyeri* of Cabanis, which is the south-eastern representative of *L. excubitor*. A nicely coloured figure is given of this bird.

98. *Miller on the Manakins of the Genus* Chiroxiphia.

[A Review of the Manakins of the Genus *Chiroxiphia*. By W. De Witt Miller. Bull. Amer. Mus. Nat. Hist. xxiv. p. 331 (1908).]

Mr. Miller reviews the species of the beautiful Piprine genus *Chiroxiphia,* and recognises eight forms as entitled to specific rank. Of these *C. napensis,* the closely allied representative of *C. pareola* on the Rio Napo, is described as a new species. As no intergradation is known between this form and its allies, " it has seemed best to give it full specific rank." *C. pareola atlantica* of Dalmas, from Tobago, and *C. p. boliviana* of Allen are likewise treated as full species.

We are glad to observe that the author does not recognise the so-called genera *Chiroprion* and *Cercophæna,* but unites them both to *Chiroxiphia.* Good coloured figures are given of *C. boliviana* and *C. napensis.*

99. *Ottosson on rare Birds' Eggs.*

[Some rare Birds' Eggs. Described by Dr. O. Ottosson. With one plate. Communicated by Einar Lönnberg. Arkiv för Zoologi, Band 4, No. 9 (1908).]

This is a paper of considerable importance, as it describes and figures the eggs of *Garrulus lidthi*, *Emberiza yessoensis*, and *Plotus rufus*. The Jay has plain blue eggs and lays them in hollow tree-trunks ; the nests were found in Amami-Oshima, an island of the Loo Choo group. The parent birds were obtained at the same time as the eggs. The Bunting was discovered breeding in the Tokio district, an extension of its range from Yesso. The Darter's eggs are from the isolated colony at the lake of Antioch described by the late Canon Tristram: they resemble those of Cormorants in their general appearance, but are spotted with brown and violet.

100. *Report on the Field-Museum, Chicago*, 1907.

[Field Museum of Natural History. Annual Report of the Director to the Board of Trustees for the Year 1907. Chicago, U.S.A., 1908.]

The Report of the Director (Mr. F. J. V. Skiff) to the Trustees on the Field-Museum of Natural History for 1907 gives a favourable account of the progress of that great Institution. The plans for the new building have been carefully prepared, but there are some difficulties about the site. The collecting-expedition sent out to British East Africa in 1905 under the leadership of Mr. C. E. Akeley had returned " with a consigment of 84 packages, weighing upwards of 17 tons," all in perfect condition. The attention of the expedition had been specially devoted to the larger mammals, of which a good series was obtained, but we see 693 bird-skins in the List, on which we shall, no doubt, have a special report in due course.

The next great expedition contemplated is one to Tibet, under the conduct of Dr. Berthold Lauter, who will devote three years to the exploration of the country.

In the list of the scientific staff we observe the names of Mr. Charles B. Cory as Curator in the Department of

Zoology, with Mr. Seth E. Meek as Assistant Curator, and Mr. N. Dearborn as Assistant Curator in the Department of Ornithology. Our old friend Mr. D. G. Elliot, M.B.O.U., has given up his former post in the Museum and is, we believe, gone on a tour round the world.

101. *Rothschild's 'Extinct Birds.'*

[An Attempt to unite in one volume a short account of those Birds which have become Extinct in historical times—that is, within the last six or seven hundred years. To which are added a few which still exist, but are on the verge of extinction. By the Hon. Walter Rothschild, Ph.D., F.Z.S. With 45 coloured plates, embracing 63 subjects, and other illustrations. London: Hutchinson & Co., Paternoster Row, E.C., 1907.]

When the International Congress of Ornithologists met at South Kensington in June 1896 a day was specially set apart for an excursion to Tring, where Mr. Walter Rothschild had invited his brother Ornithologists to inspect his Zoological Museum. Birds, as we all know, are one of the leading features of Mr. Rothschild's rich collection, and, amongst birds, those "that have become extinct within historical times," either by the agency of man or from some other unascertained cause, have always claimed a large share of his attention. Mr. Rothschild has been endeavouring to obtain specimens of the birds that come under this category for many years, and has met with a considerable measure of success. On the occasion in question he took the opportunity of collecting these rarities together in one room, where they were slightly reinforced by specimens lent to him for the occasion; and he gave a most interesting lecture upon them, which was listened to by his ornithological brethren with deep attention. The lecture was further illustrated by the exhibition of a series of excellent coloured illustrations of extinct birds prepared by some of the best artists of the day. It is mainly upon these specimens and drawings that, at the request of many of his friends, Mr. Rothschild has written and published the sumptuous volume now before us. It should be observed, however, that the letterpress has been completely rewritten, a systematic arrangement having been adopted instead of the plan pursued in the original lecture, as published in the volume of the 'Proceedings' of the Fourth International Ornithological Congress.

Mr. Rothschild commences his book with the extinct Passeres, of which he registers some 25 in his letterpress, though these are not all figured. They are mostly insular forms, which are obviously more likely to become extirpated than those of a continent. The Hawaian Islands, New Zealand, and the Mauritian group supply most of the examples of the Passerine Order, amongst which we may point to *Fregilupus*, *Ciridops*, and *Moho* as being perhaps the most remarkable for form and colour. Then, after the single extinct Goatsucker — the very curious tubular-nostrilled *Siphonorhis* of Jamaica,—come the Parrots, of which no less than 25, now lost to the earth's Avifauna, are known, but have left more or less certain proofs of their former existence. Among the Parrots, again, we find many insular species, and some, such as *Lophopsittacus mauritianus* (only known from an old drawing and a few bones), of a most remarkable character. It appears that a group of large Macaws (*Ara*), all of which have now perished, once inhabited the West India Islands. Mr. Rothschild figures six of them and describes a seventh. Passing over some smaller groups we now come to the extinct Anseres, of which twelve species are described, but only one is figured. This is a remarkable form—the "Labrador Duck" (*Camptolæmus labradorius*), allied to the Eiders. It was formerly a regular winter visitant on the Atlantic coast, but has now disappeared altogether without any apparent reason. The Ducks are followed by *Prosobonia leucoptera* and *Æchmorhynchus cancellatus*, two remarkable Waders of the Pacific, of which excellent figures by Mr. Lodge are given. The Rails, owing perhaps to their feeble powers of flight, present numerous recently extinct forms. Mr. Rothschild includes twenty of them in his volume, and figures some of the more remarkable.

"*Leguatia gigantea*" is perhaps the most extraordinary picture of the present volume, but it is perhaps a little uncertain whether such a bird ever existed. The figure is made from the descriptions and sketches of the old French voyagers, and Newton always maintained that it was a Flamingo and nothing more. But Schlegel and other good authorities were of a contrary opinion.

The Dodos, the Moas, and the Rocs are all fully treated and abundantly illustrated in Mr. Rothschild's work, and most of the facts known about these three great groups of Extinct Birds are brought together. The best possible figures of the three Dodos that can be deduced from the present state of our knowledge of them stand side by side. A brave attempt is made to get the Dinornithes and Æpyornithes into systematic order, but the complications arising from the different bases of treatment of these birds by rival authorities render this an almost impossible task. We are, however, thankful to the author for the information which he has brought together from all parts on these imperfectly known groups. We must also thank him for the useful list of the literature on Extinct Birds which heads the volume and will be very useful.

It would be ungracious towards an author who has worked so wisely and so well to call attention to certain "slips" in his work, such as the absence of a list of the species recorded in the letterpress of the volume and *not* figured. There is no doubt that Mr. Rothschild must have spent many hours of hard labour in its composition and in the selection of the splendid illustrations, and we thank him heartily for having devoted his time to such a task and brought it to a successful issue.

The following names used in Mr. Rothschild's work appear to be new :—

Casuarius lydekkeri, p. x.
Ara erythrura, p. 54.
Necropsittacus borbonicus, p. 62.
Bubo leguati, p. 71.
Strix newtoni, p. 79.
Ardea duboisi, p. 111.
Nesœnas duboisi, p. 166.
Megalapteryx hamiltoni, p. 196.
Emeus boothi, p. 210.
—— *haasti*, p. 210.
—— *parkeri*, p. 211.
Dromæus perroni, p. 236.

102. *Schæck on Fatio's Collection of Birds.*

[Notice sur la collection d'oiseaux léguée par M. Victor Fatio au Muséum d'Histoire Naturelle de Genève. Par F. de Schæck. Bull. Soc. Zool. de Genève, i. p. 51 (1907).]

The well-known Swiss naturalist Victor Fatio, whose loss we have lately recorded ('Ibis,' 1906, p. 608), has left his collection of birds and eggs to the Muséum d'Histoire Naturelle of Geneva. As this collection contains the specimens described or alluded to in Fatio's works on the Fauna of Switzerland, no more appropriate destination could have been found for it. The specimens number 1215, referable to 557 species, of which about one-third are from Switzerland and another third from other European countries. M. Schæck furnishes us with remarks on 45 of these birds, amongst which are examples of *Larus icthyaëtus* and *Xema sabinii*, both procured on the Lake of Geneva.

103. *Simon and Hellmayr's Notes on the Nomenclature of certain* Trochilidæ.

[Notes critiques sur quelques Trochilidæ. Par E. Simon et C. E. Hellmayr. Nov. Zool. xv. p. 1 (1908).]

This is a series of valuable remarks on the nomenclature of certain Trochilidæ, especially those of which the types, in the Museums of Paris and Vienna, have been carefully examined by the authors. They relate to species of the genera *Agyrtria*, *Leucochloris*, *Oreotrochilus*, *Heliangelus*, *Thalurania*, *Hylocharis*, and *Chlorestes*. It is maintained that *Aëronympha prosantis* of Oberholser is a *Heliangelus*, and the same as *H. rothschildi* of Boucard. *Basilinna leucotis pygmæa*, from Nicaragua, is characterized as a new subspecies.

104. *Snethlage on the Birds of the Rio Purus.*

[Sobre una collecção de Aves do Rio Purús, pela Dra. E. Snethlage, Auxiliar da secção de Zoologia do Museu. Bol. Mus. Goeldi (Museu Paraense), vol. v. pp. 43–76.]

Madame Snethlage, who is now attached to the staff of the Goeldi Museum at Pará, has prepared a list of the birds lately obtained by the Collectors of that Museum on the Rio Purús, a large southern branch of the Upper Amazon, hitherto little explored. In all difficult questions she has received the efficient assistance of Graf v. Berlepsch. The list enumerates the names of 193 species and subspecies, and is followed by some useful remarks of Graf v. Berlepsch, who compares it with the list of the birds of the neighbouring Rio Juruá published by Dr. von Ihering in the 'Revista do Museu Paulista' (vi. p. 430) in 1904. The two localities are shown in a map. The following species and subspecies are described as new in Madame Snethlage's paper—*Xiphocolaptes promeropirhynchus berlepschi, Myrmelastes goeldii, Gymnopithys purusianus, Piaya cayana obscura,* and *Columba plumbea pallescens.*

105. *Snodgrass and Heller on the Birds of the Galapagos.*

[Papers from the Hopkins-Stanford Galapagos Expedition.—XVI. Birds. By Robert Evans Snodgrass and Edmund Heller. Proc. Washington Acad. Sc. v. pp. 231–372 (1904).]

We have unfortunately overlooked this paper, but it is one that is well worthy of notice, as being the latest contribution to our knowledge of the remarkable Avifauna of the Galapagos.

The expedition to which it relates was sent out from San Francisco by the department of Zoology of Stanford University in the autumn of 1898, under "the patronage of Mr. Hopkins," in a sealing-schooner, and was absent 304 days. Collections more or less complete were made by Messrs. Snodgrass and Heller in nearly every class of animals and plants. An exact itinerary of the voyage will be found in Mr. Heller's memoir on the Reptiles of the expedition published in the same volume of the Journal above quoted. The collection of birds appears to have been very full and complete. The specimens are referred to 80 species, besides numerous subspecific forms which are not numbered, but are designated by letters (*a*, *b*, *c*, &c.) added to the number of the species. This plan we highly approve of, as it shews that subspecies ought not to be considered as on a par with species, which some of our friends of the "new school" seem to forget.

The last memoir issued on the Birds of the Galapagos is that of Messrs. Rothschild and Hartert (Nov. Zool. vi. p. 85, 1899), based on the collection of the Webster-Harris Expedition, in which will be found (p. 135) a list of the previously published articles on the subject and a complete discussion of it. The present paper does not materially increase our general knowledge of the Galapagan Avifauna. It adds, however, at least three species to the list (*Larus franklini*, of which a single specimen was obtained, and two new forms, denominated *Geospiza heliobates* and *Nesomimus melanotis dierythrus*), and contains an exact and methodical account of the specimens obtained by the Expedition, with a full commentary on them. No change is suggested in the general situation, and it remains as certain as ever that (as shown by Darwin, Wallace, and other leading authorities) the Galapagos afford us an excellent example of a group of Oceanic Islands peopled by accidental migration.

XXXIV.—*Letters, Extracts, and Notes.*

The following letters, addressed to the Editors, have been received:—

Sirs,—The following legend is not without a poetical strain, and will interest, I am sure, not only ornithologists, but other lovers of nature. It was communicated (in the Dutch language) by Mr. J. A. Kroesen to the Proceedings ("Notulen") of the Batavian Society of Arts and Sciences for 1903 (pp. liii–lv).

In the different districts of Kapaur, in the south-western part of Dutch New Guinea south of Maccluer Gulf, the hunting of Birds of Paradise is interdicted, because of the birds being considered by the Papuans as "*pamali*," *i. e.* "tabooed." The natives look upon them not as birds but as incarnations of human beings. Things concerning "*pamali*" they dare not mention or discuss.

The legend is as follows :—

A very ugly youngster of good family met, while fishing on the sea-shore, a beautiful maiden who was catching very many fine fishes. He fell in love with her at once, and asked her for a present of one of her large fishes. But she turned her back to him, and scolded him for his ugliness. All his nice words to win her, his proposal to take her with him into another country and to marry her, did not move her mind in the least. Finally she ran away, throwing her ugliest fish into his face, and comparing him with it. The young man was so deeply grieved by this behaviour that he fled into the mountains, to live there in solitude. But lighting upon a "*pamali*" place where ghosts were swarming, he confided to them his trouble, whereupon they promised to help him on condition that he would, after having secured his sweetheart, return immediately to the "*pamali*" place. This condition he accepted and became suddenly transformed into a male Bird-of-Paradise. He flew to the sea-shore, where he found the maiden still fishing but not succeeding in catching anything. The girl, perceiving the beautiful bird, the equal of which she had never seen before, ran after it and took much trouble to secure it. The bird flew from branch to branch, into and out of the forest, the young woman always following it. Thus it led her to the "*pamali*" place, where she was in the power of the ghosts. There she learned that the bird was the incarnation of the ugly young man whom she had ill-treated, and that, in punishment for her offensive behaviour towards him, she would be transformed into a Bird of Paradise, though into a very ugly one, and that she must marry him. The transformation took place, and since that time there are Birds of Paradise in the district. If these birds were killed the ghosts would take revenge on man by inflicting death, illness, or other mishaps.

This legend, widely spread amongst the natives, is most reluctantly told or even spoken of.

I do not doubt that the bird referred to is the Lesser Bird of Paradise (*Paradisea minor typica*), the female of which, as is generally known, is quite plain.

There is another somewhat similar legend on record from German New Guinea, which relates to *Paradisea minor finschi* and was communicated in 1896 by the missionary K. Vetter, of Simbang, on the Bay of Astrolabe, to the 'Zeitschrift für afrikanische und oceanische Sprachen' (vol. ii. pp. 230–234), under the title "Dien sega = Bird-of-Paradise the Greater."

I am, Sirs,
Yours &c.,
Berlin. A. B. MEYER, C.M.Z.S., F.M.B.O.U.

SIRS,—May I be permitted to correct some errors which appear to have crept into my paper "Contributions to the Ornithology of Egypt" in the last number of 'The Ibis.'

On page 492 the White-spotted Bluethroat has been placed under the heading of and along with the typical form, and the name *leucocyanus* has been changed to *wolfi*, though it is correctly printed in my introduction. The name *wolfi* has been used for the variety of Bluethroat with an entirely unspotted throat. Thus to anyone casually glancing through my paper it would appear that I had met with *three* forms of Bluethroat in Egypt instead of *two*.

Again, on page 498 we find under the *binomial* name *Sturnus vulgaris* the following statement :—"A bird obtained at Giza belongs to this form." This would have been quite correct if the subspecific name "*purpurascens*," which I put into the proof-sheet, had not been left out.

The birds of Egypt are of great interest on account of the abundance of subspecific forms which occur there, either as residents or on migration, and to these I have been paying particular attention.

Yours &c.,
MICHAEL J. NICOLL.

[If Mr. Nicoll will look at the 'List of British Birds' of the B. O. U., he will find the name *Cyanecula wolfi* used for the White-spotted Bluethroat. The same name has been employed in Dresser's 'Birds of Europe,' Harting's 'Handbook,' and by many other writers, and is believed to be the first name applicable to this form of the Bluethroat. We regret that the name "*leucocyanus*" was left unaltered on p. 491, and that the subspecific term "*purpurascens*" was omitted in the name of the Starling (p. 498).—Edd.]

Sirs,—The egg figured by Mr. Dresser in 'The Ibis' (above, pl. x. fig. 3) differs widely from those recently sent to Europe from the Lob Noor by Herr W. Rüchbeil, together with skins of *Rhopophilus albosuperciliaris*. A clutch of four eggs in my possession are not unlike those of *Sylvia curruca*, being white, irregularly blotched and streaked with light and darker ochreous brown, and with a few underlying leaden-grey spots, chiefly at the big end. In shape they are a short ovate and average (4 eggs) 14·87 × 12·52 mm.

I am, Sirs,
Yours &c.,
F. C. R. Jourdain.

Clifton Vicarage,
Ashburne, Derbyshire.

Sirs,—During the early part of June three Sand-Grouse (*Syrrhaptes paradoxus*) were observed in a cornfield in the eastern portion of Cleveland. A few days afterwards one was picked up dead, and I have had an opportunity of examining this specimen, which is a male in excellent plumage. The other two birds were seen at intervals until mid-June, when they both disappeared.

I am, Sirs,
Yours &c.,
T. H. Nelson.

Seafield, Redcar,
1st Aug., 1908.

[For other recent occurrences of this bird in England, see 'British Birds,' vol. ii. p. 98; and as to its appearance in

Russia, Roumania, Hungary, Austria, Prussia, and Heligoland, consult Orn. Monatschr. xxxiii. no. 7, and Orn. Jahrb. xix. 3 & 4, p. 146.—Edd.]

Ornithological Works in progress.—We have much pleasure in announcing that our fellow-member, Mr. Gregory M. Mathews, is preparing a new work on the Birds of Australia. Since Gould's 'Handbook' was published in 1865, great progress has been made in our knowledge of the subject, thanks to the labours of many local ornithologists, Ramsay, North, Campbell, and the Western Australian collectors, the results of whose labours have been chronicled in the 'Emu.'

Mr. Mathews, as a native of Australia, appeals to all the ornithologists of that country to aid him in making his work as perfect as possible. Every contribution will be fully acknowledged, and while the Author hopes that he can do justice to his subject, thanks to Dr. Bowdler Sharpe and Mr. Walter Rothschild, who have promised him all facilities of study at the British Museum and at the Tring Museum respectively, he feels that it is on the support of his countrymen that the success of his venture depends. We therefore add our appeal to the Australian ornithologists to help Mr. Mathews in the great task that he has undertaken.

Another bird-book recently announced by Mr. R. H. Porter is a volume on 'Indian Ducks and their Allies,' which is being prepared by Mr. E. C. Stuart-Baker, one of our most active writers on the Birds of the Oriental Region. It will form a handsome volume of over 300 pages of text, illustrated by thirty coloured chromolithographic plates, prepared under the supervision of Mr. Grönvold.

A third work in preparation, which will be of special interest to students of European Birds, is Colonel Willoughby Verner's 'Life among the Wild Birds of Spain,' which will be shortly issued by Messrs. John Bale, Sons, & Danielsson. Col. Verner's numerous and exciting adventures in search of the birds of Southern Spain and their nests and eggs will be fully told in this volume, which will be profusely illustrated by 25 plates and over 150 text-figures, taken from photographs and pen-and-ink sketches of the author, who is well known as an accomplished draughtsman and interesting writer.

New Paradise-Birds in the Zoological Society's Gardens.—Since we wrote last on this subject (above, p. 549), another large consignment of live Paradise-Birds has been received at the Regent's Park (on July 3rd). It contains 7 Raggi's Bird-of-Paradise (*Paradisea raggiana*), 7 Lawes's Bird-of-Paradise (*Parotia lawesii*), 8 Hunstein's Bird-of-Paradise (*Diphyllodes hunsteini*), 4 Manucodes (*Phonygama purpureo-violacea* and *P. chalybeata*), 1 New-Guinea Rifle-bird (*Ptilorhis intercedens*), 3 Black-headed Cat-birds (*Ælurædus melanocephalus*), and 2 Subalar Bower-birds (*Amblyornis subalaris*).

This splendid series was collected in British New Guinea, and was brought home by Mr. C. B. Horsbrugh for the Society in co-operation with Sir William Ingram, who is well known for his success in keeping these magnificent birds in captivity (see 'Ibis,' 1907, p. 225).

The Mediterranean Shearwaters.—In 'Avicula' (xii. fasc. 121–2, 1908), Count Salvadori has recently written a note on the Mediterranean Shearwaters, of which he has kindly sent us a copy. The chief point raised is whether the smaller ordinary species usually called *Puffinus yelkouan* is different from *P. anglorum* of Northern Europe. Dr. Giglioli is strongly of opinion that the two forms are identical. But Count Salvadori regards them as distinct species, in which he is supported by Mr. Godman in his new work on the Petrels *. Count Salvadori also discusses the difficult question of the status of *Puffinus obscurus* (Gm.).

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* *Cf.* 'Ibis,' 1908, p. 527.

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